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THE COLUMBIAN MAMMOTH

(*Elephas Columbi*)

A nearly entire skeleton, 10 feet 6 inches high at the shoulders, from near Jonesboro, Indiana. Exhibited in Hall No. 406

The American Museum Journal

VOL. VII

JANUARY, 1907

No. 1



THE present number of the AMERICAN MUSEUM JOURNAL marks a change in the policy of the magazine. In order to emphasize the news features of the periodical and make it a more satisfactory medium of communication with the Members of the Museum, the JOURNAL is to be issued monthly from October to May, inclusive, instead of quarterly, as at present. The guide leaflets will cease to form an integral part of the publication, but they will continue to be issued at intervals, and copies of them will be sent free to Members upon request made to the Director.

The guide leaflet now in press is No. 23 of the series and is entitled "Peruvian Mummies and what they Teach." The book has been prepared by Mr. C. W. Mead, assistant curator of the Department of Ethnology, and is intended as an introduction to the study of the Peruvian Hall (No. 302 of the third, or gallery, floor of the Museum). Non-members of the Museum may obtain the pamphlet for ten cents at the entrance to the building or by writing to the Librarian.

RECEPTION TO COMMANDER PEARY.

SATURDAY afternoon, December 8, by invitation of President Jesup and the members of the Peary Arctic Club Commander Peary gave in the auditorium of the Museum the first public account of his remarkable exploring expedition to the latest "farthest north." The thrilling story of the voyage of the "Roosevelt" and the dash for the Pole was told with the aid of numerous lantern slide illustrations. The personality of the speaker and the pictures added much to the vividness of the account, the bare outlines of which were already familiar to the audience through newspaper accounts. Before the lecture the Trustees of the Museum, many of the chief state and city officials, the members of the Peary Arctic Club, the officers of the American Geographical Society and the New York Historical Soci-

ety, the staff of the Museum and other scientists and educators of the City and vicinity met Mr. Peary in the Board Room of the Museum by invitation of Mr. Jesup, while after the lecture Mr. Peary held an informal public reception in the auditorium.

The great desire of the people of New York to see, hear and shake hands with the intrepid explorer was manifested by the attendance at the Museum of thousands of visitors, who packed not only the auditorium but also the adjacent exhibition halls with a multitude that greeted Mr. Peary enthusiastically when he was introduced to his audience by the President and as he walked through the Museum after the lecture under the escort of the Director.

A ZOOLOGICAL EXPEDITION TO NEW MEXICO AND ARIZONA.



URING last July and August Dr. Alexander V. Ruthven of Michigan University made a trip in the interests of the American Museum to southern New Mexico and Arizona, for the purpose of studying the reptiles and batrachians of those regions. He was accompanied by Mr. G. von Krochow of the Museum staff. The territory about Alamogordo, New Mexico, and Tuscon, Arizona, was explored in detail. In each of these localities there is a variety of habitats, ranging from the lower, arid deserts to the more humid, forest-crowned summits of the adjacent mountain ranges. Field stations under different environmental conditions were established, where, after noting the physical factors and vegetation of each habitat, the reptile and amphibian life was determined by careful collecting.

As a result of this work it was established that the reptile and amphibian life of each habitat was characteristic, as has been shown for some other animals and for plants. Notes were made on the habits of the different forms to determine their relationship to the environment with which they have been found associated, observations on food habits being supplemented by examinations of the contents of many stomachs, which have been carefully labeled and preserved.

About 1,000 specimens of cold-blooded vertebrates were secured for the Museum, besides a small collection of invertebrates, consisting principally of ants, molluses and parasitic worms. Several valuable

specimens of lizards are represented in the collection by extensive series. The results of this expedition are now being worked up in several papers, the molluscs by Mr. Bryant Walker, the vertebrates by Dr. Ruthven.

THE SKELETON OF THE COLUMBIAN MAMMOTH.



NE of the most recent additions to the collections in the Hall of Vertebrate Palaeontology is a skeleton of the Mammoth, *Elephas columbi*. This skeleton shows that the Mammoth had a very short back and long legs. Its body was not as massive as that of the Mastodon, and the pelvis is proportionately narrower. The head was carried more erect than that of the Mastodon, and the tusks, which point down at first, then curve forward and upward and completely cross at their points. The tusks of the Mastodon, on the other hand, continue farther downward before bending upward, and their distal portions turn outward.

During the middle Pleistocene or Glacial Period three well-known species of Mammoth inhabited North America. The Siberian mammoth, *Elephas primigenius*, was abundant in the northern part of America, and bodies of animals of this species have been found in the ice and frozen ground of Alaska, the flesh and hair still preserved intact. The Imperial Mammoth, *Elephas imperator*, inhabited the southern United States and its remains are found in Texas. The third species, the Columbian Mammoth, *Elephas columbi*, inhabited the greater part of the United States, and its range extended as far southwest as Mexico.

Teeth and bones of the last-named species have been identified from many localities, but the specimen now under consideration is the most nearly complete skeleton yet mounted in this country. This skeleton was found on the farm of D. C. Gift, four miles east of Jonesboro, Indiana. That part of Grant County is level and was originally swampy and had to be drained. While enlarging a drainage canal across a part of the farm, a tenant encountered the skeleton only eight feet below the surface, where it lay articulated, with its bones in position just as the animal had fallen after becoming mired in the old swamp. The feet were not found, having been perhaps scraped out and lost during the first opening of the drain, hence the lower parts of the limbs and the

feet have been restored from casts of a skeleton of *Elephas primigenius* which is in the Paris Museum of Natural History.

The following measurements show the size of this unique specimen:

Length, tips of tusks to vertical line of tail,	17 feet 9½ inches.
" base " " " " " " " " 13 " 3½ " "	
Height at shoulders,	10 " 6 " "
Length of right tusk (outside curve),	11 " 4½ " "

DEPARTMENT OF VERTEBRATE PALÆONTOLOGY; FIELD EXPEDITIONS OF 1906.



THE Department of Vertebrate Palæontology had three expeditions in the field last summer. The first, under Mr. Barnum Brown, continued the hunt for dinosaurs in the Upper Cretaceous deposits of Montana. A fine skeleton of the Duck-billed Dinosaur *Claosaurus* and several less complete specimens of these strange looking animals were secured. The Museum now possesses two mountable skeletons and an excellent skull, representing three distinct kinds of Duck-billed Dinosaurs, besides many less complete specimens. Mr. Brown also discovered remains of a large dinosaur which appears to be entirely new to science and of a small species related to the Bird-catching Dinosaur of the Jurassic period. The remarkable variety of dinosaurs from the Upper Cretaceous, most of them of huge size and bizarre appearance, is a great incentive towards continuing the search for them with especial vigor. It is hoped that the final results will enable the Museum to fill an entire exhibition hall with the dinosaurs of this period. In addition to the dinosaur remains a few specimens of the minute and very rare Upper Cretaceous mammals were secured.

The second expedition, under Mr. Walter Granger, continued the exploration of the Eocene formations of Wyoming, working this year principally in the Washakie Basin. A number of fine specimens were obtained of the characteristic large mammals of this formation, the *Eobasileus*, largest and last of the uintathere race, *Amynodon*, the first of the rhinoceroses, *Achanodon*, a gigantic pig-like animal, *Patriofelis*, a large and powerful carnivore, and of the Eocene ancestors of the Titanotheres, besides skulls and skeletons of several of the smaller

carnivora, rodents and other forms. Many of these will be new to science and all of them will aid greatly in filling out our collections from the later Eocene. Mr. Granger paid much attention to the stratigraphy of the formation, and the origin of the materials composing it, obtaining data which, with the collections of fossils secured at different levels, will enable us to fix accurately the time relations of the Washakie to the Bridger and Uinta formations (Middle and Upper Eocene).



SCENE IN WASHAKIE BASIN

The third expedition was conducted by Mr. Albert Thomson in the Lower Miocene of South Dakota. The formations of this age in the Western States are in general very barren of fossil mammals and have been but little explored, although the formations above and beneath them have yielded large collections to the explorations of the past half-century. By dint of diligent and thorough search Mr. Thomson succeeded in getting from these unpromising beds a considerable collection of skulls and skeletons, nearly all of them new to science and representing an intermediate stage between the Oligocene and later Miocene.

Among the interesting novelties of this collection is a fragmentary skeleton of a gigantic Wolverene as large as a jaguar or a black bear.

It was much the largest of the weasel family and was a truly formidable beast of prey, if it possessed the savage and bloodthirsty disposition of its modern relatives.

Professor Osborn, under whose directions the expeditions were sent out, visited all the parties during the summer and gathered valuable data for his studies upon the stratigraphy and relative age of the Tertiary formations. Dr. Matthew was with Mr. Thomson's expedition during the first half of the summer, and Mr. Gregory was of the party in the latter part of the season.

THE SELMA METEORITE.



THE collection of meteorites in the foyer of the Museum has recently been enriched by the addition of an aërolite, or stone meteorite, which was found in March, 1906, about two miles north-northwest of Selma, Alabama, near the road to Summerfield. The fortunate finder was Mr. J. W. Coleman of that city.

Mr. Coleman states his belief that the meteorite fell on July 20, 1898. At about 9 o'clock of the evening of that day at least five observers at different stations from half a mile to two and one half miles from where the stone was found saw a brilliant meteor pass through the air leaving a "trail of fire ten or twelve feet long." The meteor seems to have traveled in a direction somewhat west of north, and its flight is said to have been accompanied by a heavy, rumbling noise. No other similar meteorite has been noted in the immediate region, and this meteorite does not seem to show any more decomposition of surface than might have taken place in the eight years that have elapsed since the date of its assumed fall. The identity of this find with the shooting star of July 20, 1898, cannot of course be established with certainty, but it seems probable.

This meteorite, photographs of which are reproduced in this number of the JOURNAL, is one of the ten largest aërolites ever found. Most such bodies break to pieces in the earth's atmosphere, probably on account of unequal heating due to friction against the air, and shatter into scores and even hundreds or thousands of fragments before they reach the ground, and this is the largest entire aërolite now in the United States.



THE SELMA METEORITE

Weight, 306 lbs. Front or "Brustseite."

The Selma, as this meteorite will be called, is $20\frac{1}{2}$ inches high, 20 inches wide and 14 inches thick, and it weighs 306 pounds (138.6 kilos). A piece of perhaps four pounds weight has been lost from the mass,



THE SELMA METEORITE
Rear view.

hence it is probable that the original weight was 310 pounds. It has lain buried in the ground where it fell for several years, so that the original glassy crust has been largely decomposed and washed away, and the characteristic "thumb-mark" pittings have been partly obscured. Some portions, however, remain as an indication of its original condi-



THE SELMA METEORITE
Views of opposite edges.

tion. In shape the meteorite is roughly polygonal, without pronounced orientation features, though it seems probable that the side shown on page 9 was the "brustseite," or front, during flight through the atmosphere. The mass is deeply penetrated by cracks on both sides, but principally on the rear. The cracks do not radiate from one or more centers, nor is the apparent rigidity of the mass affected by them; hence they do not seem to have been caused by shattering due to impact with the earth. The position and character of the fissures indicate that they were due to unequal heating through friction with the air during flight through the atmosphere, the tension produced being insufficient to cause complete fracture.

Macroscopic examination of a cut and polished fragment shows the stone to have a dark brownish-gray color, and to be made up of spherical or nearly spherical "chondrules," or particles, firmly imbedded in a similar matrix. The largest chondrules are $\frac{1}{8}$ inch (3 mm) in diameter, though those more than one half as large are rare. A strong magnifying glass is needed to show one the minute grains of iron scattered through the mass.

The specific gravity of the stone is 3.42 as determined upon a fragment weighing 4.56 ounces (129.4 g) and showing some effects of decomposition. A chemical analysis of the material has not yet been made, but Dr. G. P. Merrill of the National Museum has had sections cut and polished and has published a brief scientific description of the meteorite in the Proceedings of the U. S. National Museum for 1906, where he gives the find the name which we have adopted.

E. O. HOVEY.

MUSEUM NEWS NOTES.

At the autumn meeting of the Board of Trustees President Jesup reported that since the last meeting of the Board important gifts had been received, as follows:

- From Mr. ARTHUR CURTISS JAMES, for mural decorations in the Eskimo Hall, and for field explorations for fossil horses;
- From Mr. GEORGE S. BOWDOIN, for the development of the Cetacea Collection;
- From Mr. SAMUEL V. HOFFMAN, for an entomological expedition to the Black Mountains of North Carolina;

- From Mr. JAMES R. KEENE, the skeleton of his famous race horse "Sysonby;"
- From Mrs. F. K. STURGIS an additional contribution for the purchase of Birds of Paradise;
- From Mr. FRANCIS R. APPLETON for exploration for fossil horses;
- From Mr. A. C. CLARKSON, the library and entomological collection of the late Mr. Frederick Clarkson.

PROFESSORS J. A. ALLEN AND HENRY F. OSBORN represented the Muséum at the autumn meeting of the National Academy of Sciences which was held in Boston on November 20-22 in the new buildings of the Harvard Medical School. At this meeting Professor Osborn presented two papers, one on "Section of American Tertiaries," and the other on "A Complete Mounted Skeleton of the Finback Lizard *Naosaurus* of the Permian." Among the extensive series of exhibits displayed at the conversazione held in connection with the meeting there were the following by Professor Osborn: (1) Recent restorations of extinct horses of North America, executed by Charles R. Knight, under direction of Henry F. Osborn, water-colors, photographs; (2) first complete section of the American Tertiaries,—a preliminary study.

UPON receipt of the telegrams announcing the "farthest north" attained by Commander Robert E. Peary, U. S. N., the Arctic explorer, a temporary exhibit was installed pertaining to Mr. Peary's Arctic work. One of his sledges harnessed to four mounted specimens of the dogs which he used on one of his earlier expeditions together with a figure dressed in Arctic clothing showed the means of transportation employed by the explorer. On the sledge was one of the sleeping-bags so essential to existence in the Arctic regions. On a neighboring table were shown photographs of Peary's steamer, the "Roosevelt," together with photographs of the explorer and his party. The question as to how Peary determined his position was answered by the display of a sextant for determining latitude and a chronometer for determining longitude used by General Greely in his famous polar work and abandoned by him at Fort Conger. On a section of a globe nearby illustrating the north polar regions, Peary's route to the farthest north position was shown by means of colored cord.

AMONG recent acquisitions to the Department of Mineralogy special mention should be made of a large series of nuggets and coarse gravel

Gold from placer diggings in Alaska aggregating about 4 pounds troy in weight; a wonderful crystal and a magnificent group of ruby-red Tourmaline (Rubellite) of gem quality and deep color from the noted locality at Pala near San Diego, California; and a block of quartzite from New South Wales bearing a surface of more than 90 square inches of Precious Opal.

TUESDAY, October 30, the National Association of Audubon Societies for the Protection of Wild Birds and Animals held its annual meeting in the West Assembly Hall.

THE Museum recently acquired by purchase a fine collection from the Samoan Islands. Among other things this contains a complete outfit for the manufacture of bark or "tapa" cloth. In the manufacture of this cloth, single strips of bark from a species of mulberry are prepared by scraping and soaking in water, after which they are beaten out very thin by means of small wooden clubs. These thin sheets, while still wet, are laid one over another and the whole beaten together to form a large sheet of uniform thickness. Such bark cloth is in some respects a kind of paper, but it is serviceable as cloth since it is not easily damaged by water. The finished cloth is often ornamented by printing, or rather rubbing. For this purpose designs in relief are carved on wood or built up of palm-leaf cuttings, upon which the cloth is laid and rubbed with sticks of coloring matter, like crayon. This leaves an impression of the raised portion of the carving similar to that produced when a school-boy rubs the impression of a coin into the fly-leaf of his book. Aside from the tapa outfit, the collection contains several handsome pieces of finished cloth and a number of costumes, household utensils and other implements. It is proposed to install this collection together with other material in the Museum as a special exhibit from one of the colonial possessions of the United States.

DR. E. O. HOVEY of the Department of Geology returned in the latter part of October from the convention in Mexico of the Tenth International Geological Congress to which he was sent as the delegate of the Museum. The convention met in Mexico City September 6 to 14, inclusive, and was attended by many of the prominent geologists of Europe as well as of the United States. Dr. Hovey brought back with him a large series of specimens of ores, rocks and fossils and many photographs (negatives) for the Museum collections.

A VALUABLE collection of the co-types of the ants obtained by Professor Filippi Sylvestri of Naples in a trip across South America some years ago has been presented to the Museum by the collector. The corresponding type collection was described by Professor Carlo Emery of Bologna.

THE great Scudder collection of fossil ants from Florissant, Colorado, has been loaned to the Museum for study and description. The collection consists of more than 4,000 specimens representing about 40 species. None of these species has been described, and there is ample material for the work. The specimens are almost entirely males and females which dropped into the Tertiary lake of Florissant while on their nuptial flight. Practically no workers are represented in the series.

LECTURES.

LEGAL HOLIDAY COURSE.

UPON the four principal legal holidays occurring during the winter season the Museum has for many years given lectures free to the public, no tickets being required for admission. The programme for the current season follows. The doors open at 2:45 and the lectures begin at 3:15.

Thanksgiving Day, November 29, 1906.—E. O. HOVEY, "Volcanoes,"

Christmas Day, December 25, 1906.—LOUIS P. GRATACAP, "Iceland: Its Scenery and Inhabitants,"

New Year's Day, January 1, 1907.—FRANK M. CHAPMAN, "The Home-Life of Flamingoes,"

Washington's Birthday, February 22, 1907.—HARLAN I. SMITH, "The Five American Nations: Conquerors of the Snow, Forest, Mist, Desert and Plain."

PEOPLE'S COURSE.

THE programme of illustrated Free Lectures to the People for January is as follows:

Tuesday evenings at 8 o'clock.

January 8.—E. C. Culver. "The Yellowstone National Park."

January 15.—Colvin B. Brown. "The Sierra Nevada Mountains and the Yosemite valley."

January 22.—J. W. Fairbank. "Ramona and the Land of Sunshine."
January 29.—George Wharton James. "Primitive Inventions. What We Owe to the Indian Inventor."

February 5.—"The Religion of the Southwest Indians."

Saturday evenings at 8 o'clock.

A course of lectures by Professor H. E. Crampton, Columbia University.

January 5.—"Principles of Organic Evolution."

January 12.—"The Anatomical Evidence of Evolution."

January 19.—"Development as Evidence of Evolution."

January 26.—"The Evidence of Fossils."

These lectures are given in coöperation with the Department of Education of the City of New York. They are open free to the public and no tickets are required for admittance, except in the case of children, who, on account of the regulations of the Department of Education, will be admitted only on presentation of the ticket of a Member of the Museum.

The doors open at 7:30 o'clock and close when the lectures begin.

MEETINGS OF SOCIETIES.

Meetings of the New York Academy of Sciences and Affiliated Societies are held at the Museum according to the following schedule:

On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnæan Society, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.

The programme of meetings of the respective organizations is issued in the weekly "Bulletin" of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with these circulars as they are published.

The following lectures have been given at the Museum recently through coöperation with the Academy:

October 29.—Dr. F. A. Lucas, "Elephants, Past and Present."

November 19.—Professor C. L. Poor, "The Proposed Astronomical and Nautical Museum for New York City."

December 5.—Charles Triax, "The Yellowstone National Park."



NORTHEAST QUARTER OF FOYER
Showing five of the busts of American Men of Science

The American Museum Journal

VOL. VII

FEBRUARY, 1907

No. 2

MEMORIALS OF MEN OF SCIENCE.



ATURDAY afternoon, December 29, the impressive unveiling ceremonies of the busts which have been installed in the foyer representing ten of the men who have been foremost in the advancement of science in America were held in the large auditorium. After singing the national anthem "America," Doctor Hermon C. Bumpus, Director of the Museum, acting for Mr. Morris K. Jesup, President, presented the busts to the Trustees. After the gift had been accepted by the Hon. Joseph H. Choate on behalf of the board, memorial addresses were delivered in accordance with the following programme:

Benjamin Franklin by Dr. S. Weir Mitchell of Philadelphia; Alexander von Humboldt, by His Excellency Baron Speck von Sternburg, German Ambassador, (Read by Major T. von Körner, Military Attaché of the Embassy); John James Audubon, by Dr. C. Hart Merriam, Chief, U. S. Biological Survey, Washington, D. C.; John Torrey, by Dr. Nathaniel L. Britton, Director, New York Botanical Garden, New York City; Joseph Henry, by Dr. Robert S. Woodward, President, Carnegie Institution, Washington, D. C.; Louis Agassiz, a letter was read from the Rev. Edward Everett Hale, an intimate personal friend of Professor Agassiz; James Dwight Dana, by Dr. Arthur Twining Hadley, President, Yale University, New Haven, Conn.; Spencer Fullerton Baird, by Dr. Hugh M. Smith, Deputy Commissioner, Bureau of Fisheries, Washington, D. C.; Joseph Leidy, by Dr. William Keith Brooks, Johns Hopkins University, Baltimore, Md.; Edward Drinker Cope, by Dr. Henry Fairfield Osborn, Curator, Department of Vertebrate Palæontology, American Museum of Natural History.

The occasion was a notable event in the annals of the Museum and of American science in general. The auditorium was crowded to its full capacity with members of the Museum and visiting scientists, and hundreds were turned away from the hall for lack of space for their accommodation. The addresses were alive with interest and some of them were historic in value for their appreciation of great men of the



WILLIAM COUPER

The sculptor of the busts in the Foyer

past by great men of the present who were their pupils or their friends. A pamphlet containing the addresses in full and illustrated with photographs of the busts is now being prepared to serve as a worthy memento of the occasion and a guide leaflet to the foyer.

The artist who prepared the busts is Mr. William Couper of this city, a sculptor of international reputation. The busts are intended to represent the subjects in the prime of life and at the zenith of their powers. The data used were photographs, painted and other portraits, descriptions by contemporaries and the criticisms and suggestions of friends and relatives, as far as obtainable.

EXHIBITION OF THE PROGRESS OF SCIENCE.



S a feature of the great convention of American scientists which was held from December 27 to January 2 at the Museum, Columbia University and other institutions in the city, the New York Academy of Sciences in coöperation with the Museum assembled material from all over the country to represent the progress in science, both pure and applied, that has been made during the past few years. It would be impracticable to give, in the space available in the AMERICAN MUSEUM JOURNAL, an exhaustive account of the noteworthy features of the exhibition and we shall attempt only to touch upon a few of the most salient points. The exhibition was given Friday and Saturday, December 28 and 29, under the direct auspices of the Academy and was continued under the auspices of the Museum for two weeks longer.

In the department of Anatomy a series of excellent preparations of electric fishes and dissections and diagrams of their electric organs was surprising as showing the number of such species and the strength of current induced by their peculiar organs. The exhibit of Astronomy was declared by an eminent authority to be the most remarkable and important assemblage of its kind thus far gotten together in this country, since it showed all the most important recent work of all the great observatories in the United States. In the department of Bacteriology there were extensive exhibits of cultures and methods from all the great institutions in this city which are carrying on researches in this science,

including the American Museum. From the point of view of the specialist, the exhibition was most interesting, but it required too much explanation for the average visitor to spend the time over it that it deserved.

The department of Botany contained many features of general interest, among which may be mentioned the natural Spineless Cactus from the Island of Culebra, Porto Rico; a set of more than 100 dairy fungi and bacteria, including those that give the flavor to Camembert cheese, produce the sweet and sour curdling of milk and turn milk different colors; and a series of remarkable photomicrographs of thin-sections of American woods.

The Chemistry exhibit was large. Its most popular features, perhaps, were those pertaining to radium and the effects of its use in surgery. The department of Electricity was much in evidence at the exhibition, on account, particularly, of the Telharmonium and the "Helion Filament" incandescent lamps. The former is a newly devised musical instrument, while the latter is a new lamp that bids fair to introduce a revolution in methods of illumination. The production of the helion lamp follows closely upon the successful manufacture of the tantalum and the tungsten lamps and marks the third wonderful discovery in incandescent lighting within two years. The new filament consists of silicon deposited upon carbon, and, although it costs more than the ordinary carbon filament, it lasts much longer and gives more than three times as much light for the same consumption of power.

In the department of Ethnology and Archaeology local interest centered around a large earthenware jar of Iroquoian Indian manufacture which was exhumed recently at 214th Street and 10th Avenue, Manhattan Island. The specimen is not unique, but it is the most perfect that has been found in this vicinity. An exhibit having important bearing on the antiquity of man in America was that of some worked bone objects from caves in California. The objects are apparently of Glacial or interglacial age.

The department of Experimental Evolution attracted the attention of the public through the crowing of some live roosters introduced for the purpose of showing the effects of breeding along certain lines. Other interesting exhibits were specimens and diagrams showing the manifestations of the Mendelian law of inherited characteristics under cross-breeding. In the department of Experimental Psychology mention

may be made of a series of photographs of the movements of the eye in examining sundry objects and particularly in reading, together with the apparatus used in making the negatives.

Geology and Geography were well represented, particularly through the maps and other publications showing the recent work of the United States and several State geological surveys. Special mention should be made of the new unpublished maps of Connecticut and Massachusetts. The American Museum contributed to this department models of Martinique and Mt. Pelé and a series of transparencies of the West Indies and Mexico.

In the section of Mineralogy the most important displays of popular interest were the series of specimens of unusually large and perfect crystals of Calcite collected last summer in the northern part of New York State by an expedition from the State Museum and the set of great ruby red Tourmalines and Beryls from near San Diego, California. The American Museum showed here some of the most striking recent accessions to its cabinet including a particularly handsome group of large crystals of Ruby Tourmaline (Rubellite) from California.

Invertebrate Palaeontology does not ordinarily contribute showy material to an exhibition, but attention was attracted at the Academy "conversazione" by the display of Trilobites, Eurypterids (crustaceans) Hexactinellids (glass sponges) and other fossils sent down by the New York State Museum from recent collecting in the central and western part of the state. The American Museum contributed to this section some remarkable Cretaceous cephalopods and a series illustrating the Jurassic fauna of the Black Hills of South Dakota and Wyoming.

The major portion of the display in the section of Vertebrate Palaeontology was contributed by the American Museum and consisted of many remarkable specimens most of which have been noticed in previous issues of the JOURNAL. Mention should be made, however, of the skeleton of the strange-looking Fin-backed Lizard, *Naosaurus*, the restorations of several fossil fishes and the practically complete specimen of a giant Tortoise from the Badlands of Wyoming. This Tortoise has its nearest living relatives among the big turtles of the Galapagos Islands.

To the sections of Pathology, Pharmacology, Physics and Physiology the American Museum made no contributions of exhibits. The section of Physics, as usual, attracted much attention from visitors.

Recent earthquakes aroused much interest in a new form of seismograph and its records for New York City. A series of photographs taken with the lens from a fish's eye was worth more than a passing glance. The Zeiss epidiascope is a new and successful electric lantern device for throwing on a screen pictures from ordinary photographic prints and other opaque objects. A prominent feature of the Physics exhibit was a lecture Saturday evening, December 29, by Professor E. F. Nichols on "The Pressure of Light," illustrated with experiments and lantern slides. The Physiology exhibit was extensive and contained much of technical as well as popular interest. Something in motion always attracts a crowd, hence the popularity of the zoëtrope showing a series of kinetoscope pictures of the movements of the alimentary canal taken with X-ray apparatus, and the working model of the heart showing perfectly the action of valves.

By far the most attractive exhibit of all, and the one showing most clearly the advances made during the past five years, at least along certain lines, was that of the department of Zoölogy. The exhibit consisted principally of contributions from the American Museum of Natural History, the New York Zoölogical Park, the Aquarium and the Brooklyn Museum. Among the American Museum exhibits, most attention was attracted perhaps by that of two mounted lions, showing in most striking manner the advance that has been made in a comparatively few years over the old methods of taxidermy. The new ideas were exemplified in the mount of "Hannibal," the lion, so well known to many visitors at the Zoölogical Park in Bronx Park. Other exhibits were entered by the Museum, but not removed from the exhibition halls. These were the group of Wapiti, or American Elk, in the East Mammal Hall, second floor of the building, and ten groups of North American birds with panoramic backgrounds, illustrating a novel method of lighting. In seven of these the background is curved, so as to represent the horizon in its natural position. Mention should be made of the wax-and-glass models of various invertebrates, particularly some insects, the familiar Squid of the New England coast and an Actinian (sea anemone). The exhibit from the Zoölogical Park consisted, for the most part, of maps, photographs, transparencies and samples of labels. The New York Aquarium, in addition to similar exhibits, showed some of the marine aquaria which are supplied to the public schools of the city. The Brooklyn Institute Museum exhibited typical collections

showing its efforts to disseminate knowledge outside the Museum. Japanese Sharks, Hag Fishes and other curious marine forms were very interesting to the specialist, and Economic Entomology was illustrated, in part, by the photographs, transparencies and specimens illustrating recent progress in New Jersey in the extermination of the mosquito and in methods of educating the public on the subject.

EXPEDITION TO THE DESERT OF FAYOUM, EGYPT.



N January 5 Professor Henry F. Osborn sailed for Egypt accompanied by Messrs. Walter Granger and George Olsen of the Department of Vertebrate Palaeontology on an exploring expedition of three months into the Fayoum desert. In 1900 Professor Osborn¹ predicted that the remote ancestors of the Proboscidea, Sirenia and Hyracoidea would prove to be of African origin, and soon afterward, through the extensive exploration and study of this region by the Egyptian Survey, this prophecy came true. This desert has yielded some of the most remarkable recent discoveries in palaeontology, among which may be cited, besides those in the three orders above mentioned, many entirely new and unique forms, one of which is *Arsinoitherium*. Dr. C. W. Andrews of the British Museum and Mr. Hugh J. N. Beadnell of the Egyptian Survey have been the principal students of this fauna and have described their discoveries in a series of papers published during the last five years, culminating in a large quarto memoir published last year by Dr. Andrews.

Ever since the fulfillment of his prophecy and the discovery of this fauna, new to science, Professor Osborn has been anxious to visit and explore the Fayoum, but he felt that he could not go before the publication of Dr. Andrews's report freed the field to all scientific workers. Palaeontologists at present regard Africa as the storm center of their work and look to the revelation of its secrets for the solution of many of the problems which confront them in the unraveling of the past. If the expedition is successful, the addition of this fauna to the collection of fossil vertebrates in our Museum will greatly enhance its interest to the public and its value to the student.

¹ Faunal Relations of Europe and America during the Tertiary Period and Theory of the Successive Invasion of an African Fauna into Europe. Ann. N. Y. Acad. Sci., Vol. XIII, No. 1, July 21, 1900, pp. 1-72.

President Jesup provided the necessary pecuniary support for the expedition, and Professor Osborn embarked on his undertaking with letters from President Roosevelt to Lord Cromer, the head of the Egyptian government, introducing him as Geologist and Palaeontologist of the U. S. Geological Survey, as well as Vice-president and Curator of this Museum, and from eminent English and German scientists who have preceded him in the work of exploring this desert. Professor Osborn will return about April 1 and will doubtless have a story of experiences very different from those incident to the exploration of our own western country, to which he has devoted so much time in the last fifteen years, interesting as the latter have been. The party goes by camel train southwestward from Cairo three days' journey into the desert, and the region in which work is to be carried on is at least fifty miles from the nearest source of water.

THE MUSEUM "BULLETIN" FOR 1906.



THE twenty-second volume of the BULLETIN of the American Museum was issued during the year 1906. The articles, which pertain to the scientific work of the museum and are technical in character, are also published separately and, like the volume itself, may be obtained from the Librarian. The table of contents of the volume is as follows:

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MUSEUM NEWS NOTES.



PROFESSOR William M. Wheeler, Curator of Invertebrate Zoölogy, lectured in the auditorium on "The Polymorphism of Social Insects" before a large audience on Friday, December 28. The lecture was followed by a meeting at which was organized the Society of American Entomologists, with Professor J. H. Comstock of Cornell University as president and Doctor E. S. G. Titus of Washington, D. C., as secretary. The society includes economic as well as other working entomologists and begins life with nearly three hundred members. In connection with the meeting an interesting exhibition was made, the principal features of which were some air-brush enlargements of sundry insects for lecture room purposes, a berlese apparatus for catching insects, a wonderful series of photographs of spiders' webs, an artificial ant nest and a series of excellent specimens of fossil insects from Florissant, Colorado.

ON December 28 and 29 the Geological Society of America held largely attended sessions of its annual meeting at the Museum. This meeting formed a portion of the great convention of scientific societies which was held in New York City from December 27 to January 3, inclusive.

ON Saturday evening, December 29, a reception to the visiting delegates of the American Association for the Advancement of Sciences and affiliated societies was given at the Museum by the trustees in co-operation with the New York Academy of Sciences. One of the features of this reception was a series of brief lectures with lantern slide illustrations which were given in the large lecture hall according to the following programme:

- "Mt. Pelé and St. Pierre," by E. O. Hovey;
- "The Fur-Seal Islands of Alaska," by Charles H. Townsend;
- "The Home-Life of the Brown Pelican," by F. M. Chapman;
- "The Fire-Walking Ceremony of Tahiti," by H. E. Crampton;
- "Illustrations of Wild Flowers used in Lectures by the Society for the Preservation of Native Plants," by Charles L. Pollard;
- "Recent Explorations and Results of the Department of Vertebrate Palaeontology," by Henry F. Osborn.

THE American Bison Society held its annual meeting at the Museum on Thursday, January 10. This society has for its object not only the prevention of the extermination of the Bison, but also the encouragement of the raising of the animal as a commercial proposition. A generation ago the Bison, or American Buffalo, roamed over the western plains in vast herds, estimated to contain more than ten million individuals, while to-day, on account of the merciless and wanton slaughter practised in the early eighties, scarcely two thousand are known to be in existence. The society proposes to encourage the establishment of Bison reservations in each state where climate and other conditions are favorable for the maintenance and increase of herds. For New York the proposition is that, as a beginning, the State set aside nine square miles in one of the reserved areas of the Adirondack region and appropriate \$15,000 for the purchase and maintenance of a herd of fifteen Bison. Dr. William T. Hornaday, director of the New York Zoölogical Park, is the president of the society.

THE Department of Vertebrate Palaeontology has added to its Horse Alcove, through the generosity of Mr. Randolph Huntington, the skeleton of the Arabian stallion "Nimr." The skeleton has been mounted by Mr. S. H. Chubb under the direction of Professor Osborn in such a manner as to show the characteristics of the Arabian Horse, particularly the high elevation of head and tail when the animal is excited. This race of Horse is characterized by a small skull with high, prominent, broadly separated orbits, slender nose and concave profile, horizontal position of pelvis, round thorax, long and slender cannon bones and pasterns. The mounting of the skeleton was undertaken only after long study of the Arabian horses in the Huntington stud and many photographs taken from life.

MISS MARY LOIS KISSELL has been engaged by the Department of Ethnology to arrange the exhibits of basketry for the various North American tribes. The Museum possesses large collections of some very rare Californian baskets, particularly the so-called "ti-stitch" of the Pomo. The entire Pomo collection has been re-arranged according to the weave, and labels for the specimens are being prepared. The plan of the new exhibit includes a general synoptic series for the chief weaves employed in the different parts of the world. Following this it is proposed to arrange according to locality the Museum's large collection of baskets from California and the adjacent parts of the Pacific Coast.

THE American Institute of Social Service opened an Exposition of Safety Devices and Industrial Hygiene at the Museum Tuesday, January 29, to continue two weeks. The exhibition, which is free to the public, comprises live machinery, working models and photographs from various European countries, as well as from the United States, and shows in striking manner the fact that we are nearly a generation behind Europe in any organized effort to protect workmen from injury while they are at work. The exhibition has aroused much public interest on account of the great recent increase in accidents affecting the life, limbs and health of American workmen.

THE record of attendance at the Museum during the year 1906 was 476,133 visitors.

LECTURE ANNOUNCEMENTS.

MEMBERS' COURSE.

THE second course of lectures for the season 1906-1907 to Members of the American Museum of Natural History and persons holding complimentary tickets given them by Members will be given during February and March. The lectures will be delivered on Thursday evenings at 8:15 and will be fully illustrated by stereopticon views. The programme for the course is as follows:

- February 21.—FRANK M. CHAPMAN, "The Birds of Spring."
 February 28.—RICHARD TJÄDER, "Hunting Big Game in British East Africa."
 March 7.—FREDERIC A. LUCAS, "Whales and Whaling."
 March 14.—EDMUND OTIS HOVEY, "Earthquakes; Their Causes and Effects."
 March 21.—CLARK WISSLER, "Living with the Indians of the Plains."

PUPILS' COURSE.

THE Lectures to Public School Children will be resumed in March and will be given in accordance with the following programme.

	Mar.	Apr.	
Monday,	4	8	—"Along the Historic Hudson." By G. H. Sherwood.
Wednesday,	6	10	—"Life in the Far North." By H. I. Smith.
Friday,	8	12	—"New York City in Colonial Days." By R. W. Miner.
Monday,	11	15	—"The American Indians of today." By G. H. Pepper.
Wednesday,	13	17	—"Commercial Centers of Europe." By E. O. Hovey.
Friday,	15	19	—"Farming and Ranching in the United States." By G. H. Sherwood.
Monday,	18	22	—"Travels in South America." By Barnum Brown.
Wednesday,	20	24	—"Natural Wonders of our Country." By R. W. Miner.
		APR.	
Friday,	5	26	—"The Products of Our Mines." By E. O. Hovey.

These lectures are open to public school children accompanied by their teachers and to the children of Members of the Museum on the presentation of membership tickets. Particulars of this course may be learned by addressing the Director of the Museum.

PEOPLE'S COURSE.

Tuesdays at 8 p. m. The continuation of a course of illustrated lectures by George Wharton James.

February 5.—“The Religion of the Southwest Indians.”

February 12.—“The Prehistoric and Aboriginal Dwellers of the Southwest.”

February 19.—“The Colorado Desert: Its Horrors, Mystery and Reclamation.”

February 26.—“Things We May Learn from the Indians.”

Saturdays at 8 p. m. The continuation of a course on Evolution by Professor H. E. Crampton of Columbia University.

February 2.—“The Method of Evolution.”

February 9.—“The Evolution of the Human Species.”

February 16.—“The Evolution of Human Races.”

February 23.—“Evolution of Mind, of Society and of Ethics.”

These lectures are given in coöperation with the Department of Education of the City of New York. They are open free to the public and no tickets are required for admittance, except in the case of children, who, on account of the regulations of the Department of Education, will be admitted only on presentation of the ticket of a Member of the Museum.

The doors open at 7:30 o'clock and close when the lectures begin.

MEETINGS OF SOCIETIES.

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On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnæan Society, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.

The programme of meetings of the respective organizations is issued in the weekly “Bulletin” of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with these circulars as they are published.



THE BARBARY LION "HANNIBAL"
Modeled and mounted at the American Museum by Mr. James L. Clark

The American Museum Journal

VOL. VII

MARCH, 1907

No. 3

THE AFRICAN LION "HANNIBAL."



O much favorable comment has come to the Museum regarding the illustration of the mounted lion that was issued with the announcement of the spring courses of lectures that we think that our Members will be interested in knowing how the specimen was acquired and how it was prepared and mounted.

On October 17, 1902, Miss Carnegie, daughter of Andrew Carnegie, presented to the New York Zoölogical Park an excellent example of the Barbary lion. On February 21, 1905, "Hannibal," as the lion was called, died, and the body was presented to the American Museum, through the courtesy of the Zoölogical Society. About a year later, Mr. James L. Clark, the Museum's animal sculptor, began preparations for modeling the animal. The work was completed a few weeks ago, and the lion was seen by the public for the first time at the Exhibition of the New York Academy of Sciences which was held at the Museum from December 27, 1906, to January 14, 1907. It will soon be placed on permanent exhibition.

When Mr. Clark began preparations for mounting the lion he visited the Zoölogical Park and made a study in clay from living specimens. This was prepared with great care, attention being paid to every detail of structure. After the small model had been completed, the real work of mounting began. The general outline of the animal was obtained, and the basis of the life-sized model formed, exactly as a sculptor makes an armature for a large figure. On this foundation wet clay was piled until the mass corresponded in some degree to the measurements which had been made from Hannibal in the flesh. Modeling tools in trained hands then developed the surface and reproduced with precision the contours of muscle, cord and tendon.

From time to time the skin was placed over the clay to insure an exact fit, and any imperfections in the model were corrected. When at last the desired form had been attained, a plaster mold was taken, from which a cast was made. This cast was made very thin and lined

with burlap, to combine strength and durability with the minimum of weight. After the plaster was dry, a coat of shellac was given to make it water-proof, the skin was adjusted, and the seams were neatly sewed up. Last of all, the eyes, nose and mouth were modeled,—the



COMPLETED PLASTER CAST OF LION
Ready for application of skin

most difficult and interesting part of the work, for the delicate lines require the utmost skill and closest study for successful reproduction, and the modeling here determines the whole expression of the face and the success or failure of the mount.

This, in brief, is the method which was employed in preparing the Carnegie lion for exhibition. In mounting the animal the subject has been treated from the artist's standpoint, and the effort is successful in getting away entirely from the mechanical side of taxidermy. The attitude chosen is rather unusual. The animal is represented as being in a position of rest, which gives an excellent opportunity for displaying the general anatomy which has been so carefully worked out by the sculptor.

THE NAOSAURUS, OR "SHIP-LIZARD."



ONE of the most ancient as well as most grotesque of fossil reptiles is the Naosaurus, a skeleton of which has recently been placed on exhibition in the Dinosaur Hall. The animal was about eight feet long, a heavy-bodied, short-tailed carnivorous reptile with an enormous bony fin upon its back. The fin is composed



HANNIBAL

From the modeled mount in the Museum

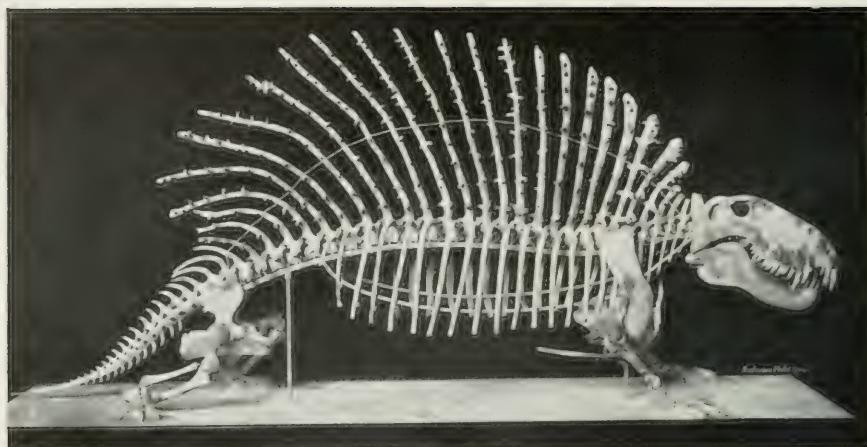
of the spines of the vertebrae greatly elongated, and each spine bears a series of little cross bars, the arrangement suggesting the masts and yards of a square-rigged ship, whence the name of *Nao-saurus* or "Ship-Lizard." This remarkable specimen is a part of the Cope Collection of Fossil Reptiles which was presented to the Museum by President Jesup a few years ago. The bones were collected in the Permian beds of the Wichita river region, Texas, by Charles H. Sternberg.

The spines of *Naosaurus* spread out like the sticks of a fan and during life were probably connected by tough, horny skin, though not covered with flesh, for without some such connecting tissue the spines might easily be wrenched out of place, dislocating the backbone, since the fin is an extension of the vertebrae, unlike the fins of fishes, which are independent of the backbone, or the crest of the Iguana, which is simply an outgrowth from the skin. Although the large sharp teeth are well adapted to seizing and tearing the animal's prey, they are curiously ill-fitting, and apparently the jaws could not be tightly closed. The under side of the body was covered with bony scales.

The use of the great back fin has not yet been satisfactorily explained. It may have served partly to protect the backbone, always the most vulnerable part in such animals, but more probably it was chiefly ornamental. Suggestions that it served to conceal the animal by resembling, to the untutored eye of its prey, the reeds and rushes among which it lurked, or as a sail to enable it to traverse the waters of the Permian rivers and lakes, need not be taken very seriously.

Although clumsy and awkward looking in comparison with the more highly developed carnivorous reptiles and mammals of later periods, the *Naosaurus* was the most active and powerful predaceous animal of its time. A suggestion of its fighting habits is conveyed in the injury to one of the spines in this skeleton. This was broken and displaced during life, probably in some affray, and afterwards united by a growth of false bone. Several other specimens in the collection bear marks of injuries received during life.

With this skeleton the Department of Fossil Vertebrates enters upon the illustration of the fauna of the Age of Amphibians, which preceded the Age of Reptiles as that preceded the Age of Mammals in the history of the earth. In the Hall of Fossil Mammals may be seen the rise and development of the various races of quadrupeds which to-day inhabit the earth; while the Dinosaurs, in the Dinosaur Hall, and the Marine



THE SKELETON OF NAOSAURUS

Cope Collection

A great, flesh-eating lizard, eight feet long, from the Permian beds of Texas.
Collected by Charles H. Sternberg. Mounted at the American Museum in 1906
by A. Hermann.



MODEL OF NAOSAURUS

Executed under the direction of Professor H. F. Osborn by Charles R. Knight
in 1907.

Reptiles, in the corridor, belong to an earlier period during which Reptiles were the dominant animals of the world, and the Naosaurus and its contemporaries of the Permian Period are of that still more ancient time when Amphibians, related to the efts and salamanders of the present day, were the dominant animals and the reptile race was in its infancy. The splendid series of Permian fossils contained in the Cope collection, together with valuable collections more recently made for the Museum, will make a remarkable exhibit of these gigantic amphibians and primitive reptiles, which have heretofore been imperfectly known.

The extreme remoteness of this period may be judged from the estimate that the Naosaurus lived twelve million years ago, or twice as long ago as the Brontosaurus, six times as old as the Four-Toed Horse and two hundred times as old as the Mammoth and the Mastodon or the oldest traces of fossil Man.

The scientific description of the Naosaurus skeleton by Professor Osborn will shortly appear in the Bulletin of the Museum.

A NEW ESKIMO EXHIBIT.



THROUGH the great amount of excellent material brought in from the many expeditions to the Far North made by Commander Robert E. Peary, U. S. N., and the extensive whaling cruises of Captain George Comer the American Museum stands preëminent among all institutions along the lines of ethnological research amid Arctic peoples. The completeness of the material and data thus assembled has enabled the Museum to install a series of groups and cases which illustrate vividly the home and village life of the Central Eskimo, together with their utensils, implements and weapons and the methods of using them.

A large free space has been formed at the north end of the North Hall on the ground floor of the building near the entrance to the auditorium by removing two of the tall pier cases and substituting lower cases which are better adapted to the display of the material used. One result of the change is that from any point within the area the visitor may obtain a clear general idea of the whole exhibit. Resting places for visitors have been provided in the shape of two skin-covered sledges which were among the number used by Mr. Peary in his arctic work.

An imagination that is vivid enough to eliminate the comforts of the exhibition hall would enable a person, sitting upon one of these sledges to think himself among the interesting inhabitants of the land of cold



INTERIOR OF ESKIMO IGLOO

From group in Hall No. 108

and snow,—the land of the midnight sun in summer and of darkness in winter, save for the brilliant moonlight and the aurora borealis.

A general glance at the exhibit leads to an appreciation of the bleak characteristics of the land of the Eskimo. Almost no wood is to be seen,

most of the objects having been made from some part of an animal, and bone, horn, tusk and skin have been ingeniously made to serve every purpose. The seal-oil lamp has been devised for giving light and heat.

Methods of manufacture are illustrated by life-sized figures of men



ESKIMO WOMAN FISHING THROUGH THE ICE

From group in Hall No. 108

and women making or mending harpoons, harness, sledges and garments. The practically complete absence of metal from the region leads to the employment of thongs in joining bits of wood or bone for making sleds, boxes and boats. The stray bits of precious iron or steel obtained by barter are used only for weapons or tools.

Vegetation in Eskimo lands is extremely scanty and is almost exclu-

sively confined to mosses, rushes or, in some localities, a few low shrubs, none of which are suitable for the food of human beings. The environment, therefore, drives the Eskimo to hunting and fishing as a means of livelihood, and the center of the space is occupied by a small modeled group representing a man in the act of harpooning a seal, while a woman crouching by his side is a vitally interested spectator. The providing of food being the chief problem of existence in these far northern regions, two life-sized groups have been installed at the north side of the exhibit which typify two aspects of the universal occupation. One of these groups represents the interior of an igloo or snow house, where a woman is cooking by means of a seal oil lamp, while a child is creeping about the floor; the other group shows a woman fishing through a hole in the ice, under the lee of a wall of snow blocks which protects her from the cold, biting winds.

In spite of their adverse environment the Eskimo have developed a love for art, as is shown in the case devoted to carvings and engravings in ivory and bone. The walls and case fronts of the alcove are decorated with skulls, tusks and horns of the walrus, narwhal and wild reindeer, while the figure of a man in hunting costume in a kayak has been placed on top of one of the cases. An additional pleasing feature of the new installation is the arrangement of concealed electric lamps within the cases, by means of which a diffused but ample light is thrown on the specimens.

MUSEUM NEWS NOTES.

The annual meeting of the Board of Trustees of the Museum was held at the Metropolitan Club, Monday evening, February 11. The officers of 1906 were re-elected, namely:

President, MORRIS K. JESUP,
First Vice-President, J. PIERPONT MORGAN,
Second Vice-President, HENRY FAIRFIELD OSBORN,
Treasurer, CHARLES LANIER,
Secretary, J. HAMPDEN ROBB,
Director, HERMON C. BUMPUS.

In addition to the routine business of the meeting, a vote of thanks was passed to the members of the Peary Arctic Club for their generosity

in presenting to the American Museum of Natural History the valuable collections made by Commander Robert E. Peary, U. S. N., on his recent expeditions to the Arctic under the auspices of the Club, and Miss Maria R. Audubon and Miss Florence Audubon were elected Life Members of the Museum in recognition of their gift of valuable sketches, drawings, plates and personal trophies of the ornithologist, John James Audubon.

A CABLEGRAM from Professor Osborn announces the auspicious starting from Cairo, on January 30, of his expedition into the Desert of Fayoum. He goes with valuable coöperation on the part of the Egyptian government and has every prospect of achieving important scientific results. Professor Osborn and two of his assistants in the Department of Vertebrate Palaeontology left New York on January 5, as related in the February JOURNAL, to explore certain portions of the Fayoum desert for fossil mammals needed to fill gaps in the series illustrating several lines of evolution.

THE material brought back by Commander Robert E. Peary, U. S. N., was removed from the ship "Roosevelt" to the Museum during the latter part of January. This material, which comes to the Museum as the gift of the Peary Arctic Club, adds a large number of particularly desirable specimens to the collections from the Far North. Magnificent skulls and skeletons of walrus, narwhals, seals and musk oxen, an entire herd of pure white reindeer (a new species which has been named *Rangifer pearyi* by Professor Allen), clothing and implements of household use, hunting and fishing and sledges are among the items of this collection. The most interesting single piece from the popular point of view is perhaps the sledge with the help of which the new farthest north record was made and which Mr. Peary has christened the "Morris K. Jesup."

THE collection made by the Tjäder Expedition into British East Africa was received at the Museum during January. This material, which is wonderful in the extent, variety, size and perfect condition of its specimens, fulfills the announcements of success already made. A friend has made it possible for the Museum to acquire this collection, and it will receive full description in a subsequent issue of the JOURNAL.

A COLLECTION of fossil leaves from the Fort Union beds of Tertiary time has recently been received at the Museum. The specimens were gathered by Mr. Barnum Brown and his assistants in central Montana during the field season of 1906. The collection, which is said by Doctor F. H. Knowlton of the National Museum, a high authority on palæobotany, to be the finest he has ever seen from this deposit, comprises many remarkably fine examples of twenty-one known species belonging to fourteen genera, besides several new genera and species. Aside from its value from the point of view of the palæobotanist, the collection has great importance as a means of separating several geological horizons. The Fort Union beds contain beds of lignite, or brown coal, which are an important source of fuel. In some places this lignite has been ignited by spontaneous combustion or through some other natural agency, and the fires have burned for an unknown length of time, baking and fusing the clays above and below the coal until they look like brick, slag or volcanic scoriæ. Specimens of this material also were brought in by the expedition.

THE International Exhibition of Safety Devices which was open in the power room and adjacent corridor from January 29 to February 9 was the first affair of the kind ever held in this country, and it attracted a large number of visitors. There were about 300 entries of exhibits comprising all sorts of contrivances for the prevention of accidents and of injury from unavoidable accidents in street, house and factory. In connection with the exhibition lectures were delivered on February 1, 4 and 7 by Dr. W. H. Tolman upon "European Museums of Safety Devices and American Industrial Betterment," while on February 11 Dr. Josiah Strong lectured on "Safety for American Life and Labor."

THE legal holiday lecture of New Year's Day was given by Mr. Frank M. Chapman upon the topic "The Home Life of Flamingos" and was illustrated with some of the remarkable photographs from nature a portion of which were used in making up the flamingo group. The lecture on Washington's Birthday was by Mr. Harlan I. Smith upon "The Five American Nations: Conquerors of the Snow, Forest, Mist, Desert and Plain." The attendance at the four lectures given on the principal holidays of the winter was 2710, indicating the hold that this course has upon the public.

THE West Side Natural History Society held a special meeting in the West Assembly Hall of the Museum on the evening of February 7, when Mr. B. S. Bowdish of Demarest, New Jersey, gave an illustrated lecture upon "The Birds of Demarest, New Jersey."

During February, Mr. Frank M. Chapman delivered a series of eight lectures in the Lowell Institute Course at Boston. His topic was "The Distribution of Bird Life in North America."

THE annual meeting of the Board of Directors of the Audubon Society of the State of New York was held at the Museum Thursday afternoon, January 17.

LECTURE ANNOUNCEMENTS.

MEMBERS' COURSE.

THE second course of lectures for the season 1906-1907 to Members of the American Museum of Natural History and their friends. The programme is as follows:

- Thursdays at 8:15 P. M.
 February 21.—FRANK M. CHAPMAN, "The Birds of Spring."
 February 28.—RICHARD TJÄDER, "Hunting Big Game in British East Africa."
 March 7.—FREDERIC A. LUCAS, "Whales and Whaling."
 March 14.—E. O. HOVEY, "Earthquakes; Their Causes and Effects."
 March 21.—CLARK WISSLER, "Living with the Indians of the Plains."

PUPILS' COURSE.

	Mar.	Apr.	
Monday, .	4	8	—"Along the Historic Hudson." By G. H. Sherwood.
Wednesday,	6	10	—"Life in the Far North." By H. I. Smith.
Friday,	8	12	—"New York City in Colonial Days." By R. W. Miner.
Monday,	11	15	—"The American Indians of today." By G. H. Pepper.
Wednesday,	13	17	—"Commercial Centers of Europe." By E. O. Hovey.
Friday,	15	19	—"Farming and Ranching in the United States." By G. H. Sherwood.

	Mar.	Apr.	
Monday,	18	22.—“Travels in South America.”	By Barnum Brown.
Wednesday,	20	24.—“Natural Wonders of our Country.”	By R. W. Miner.
Friday,	5	26.—“The Products of Our Mines.”	By E. O. Hovey.

This course of lectures is open to public school children accompanied by their teachers and to the children of Members of the Museum on the presentation of membership tickets. Particulars of the course may be learned by addressing the Director of the Museum.

PEOPLE'S COURSE.

Given in coöperation with the City Department of Education.

Tuesdays at 8 P. M.

A course of five lectures on the “Far Eastern Question” by MR. ELWOOD G. TEWKSBURY, American Board of Missions, New York City.

March 5.—“The White Peril.”

March 12.—“The Siege of Peking.”

March 19.—“The Yellow Peril.”

March 26.—“The New Far East.”

April 2.—“Asiatic-American Reciprocity.”

Saturdays at 8 P. M.

A course of nine lectures on “Electricity and Electrical Energy” by PROFESSOR JOHN S. MCKAY of Packer Collegiate Institution, Brooklyn.

March 2.—“Relation of Electricity to Matter,—the Electron Theory.”

March 9.—“Relation of Electricity to Energy. An Electric Charge and an Electric Current.”

March 16.—“Electric Currents, or Electricity in Motion.”

March 23.—“Thermal Relations of Electric Currents.”

March 30.—“Chemical Relations of Electric Currents.”

MEETINGS OF SOCIETIES.

The meetings of the New York Academy of Sciences and Affiliated Societies will be held at the Museum during March as usual. The programmes are issued in the weekly “Bulletin” of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with these circulars as they are published.



WARD'S GREAT BLUE HERON

Habitat group representing a scene in central Florida near the Indian River.

The American Museum Journal

VOL. VII

APRIL, 1907

No. 4



URING the past month the Museum has issued a new Guide Leaflet. This pertains to the extensive collections in the Peruvian Hall and is descriptive of the strange looking "mummy bundles" which come from Peru and their contents and the objects which have been found associated with them in the graves.

The author is Mr. Charles W. Mead, of the Department of Ethnology, who has devoted several years to the study of Peruvian archaeology and has made many interesting discoveries. The importance of the mummy bundles and the contents of the graves of the ancient Peruvians is enhanced by the fact that the people had no written language and that these objects are almost the only data that we have for studying the manners and customs of the interesting people that the Spaniards found inhabiting the Pacific slopes of the central Andes at the time of the Conquest. The Leaflet, which is No. 24 of the Museum series, will be sent free, upon request, to any Member of the Museum. Others may obtain the pamphlet at the entrance to the building or from the Librarian on payment of 10 cents.

HABITAT GROUPS OF BIRDS.

WITH this number of the JOURNAL we present illustrations of two of the new bird groups which have been mounted in the Hall of North American Ornithology (Gallery floor, north wing). These are part of a series which is being prepared with funds provided by the North American Ornithology Fund representing the birds of the continent in their natural surroundings, or "habitats."

One of these groups represents a family of Ward's Great Blue Heron in the swamps of central Florida near the Indian River. This bird, once abundant, has been almost exterminated by plume hunters.

The other group illustrated in this number of the JOURNAL is that of the Prairie Hen and represents several couples during the mating season, when the male goes through his peculiar antics of "drumming"

THE PRAIRIE HEN
Habitat group showing a scene in the Sand Hill Region of western Nebraska



and dancing. The material for this group was collected by Mr. Chapman in the Sand Hill region of western Nebraska near the town of Halsey last spring. Mr. Chapman considered himself very fortunate in witnessing this performance of the Prairie Hen at close range, thus securing the data from which the group has been constructed.

The backgrounds have been painted by Mr. Bruce Horsfall, who was sent by the Museum to make the requisite studies in the field and the accessories have been prepared at the Museum under the direction of Mr. J. D. Figgins.

THE MUSEUM'S NEW WHALES.



HE Museum is fortunate in having secured the skeleton of two Atlantic Right Whales (*Balaena biscayensis*) which were captured off the south shore of the eastern end of Long Island on Washington's birthday. Such an opportunity has offered itself but seldom before in a generation, and the animals too are becoming very scarce. Furthermore, when whales are taken on a cruise the skeleton is rarely preserved, particularly with all the small bones intact.

Early in the morning of February 22 three whales, one small and two large ones, were sighted about five miles from shore by the fishermen of Amagansett, L. I., and immediately a boat load of hardy men under the leadership of Captain Josh Edwards, an old time whaler, set out in pursuit, for the carcass of a large Right Whale means thousands of dollars to its captors. Meanwhile another boat load of fishermen from Wainscott, ten miles west of Amagansett, joined in the chase, which became an exciting adventure for the two small boats so far from land in mid-winter. Fortunately the weather was clear, though cold.

The Amagansett crew made fast to the cow whale and succeeded in killing her in the open ocean, but they had a hard task in towing the body to the beach. The bull made good his escape, but the Wainscott crew harpooned the calf and then had an easy time, for the wounded animal, also a female, headed straight for shore and landed high and dry on the beach.

The next morning the news of the capture of the whales was received at the Museum and two men from the Department of Preparation and



THE AMAGANSETT RIGHT WHALE
Stripping off the blubber



THE AMAGANSETT RIGHT WHALE
Lower jawbone, stripped of flesh but still attached to the head.



THE AMAGANSETT RIGHT WHALE
The upper jaw, showing whalebone in place



THE WAINSCOTT WHALE
Right flipper, edgewise view

Installation were sent by the first train with instructions to "get the specimens." Their experiences are best told in their own words.

"We reached the whales Saturday evening, and after bargaining for both skeletons and the whalebone of the larger specimen we stopped the work of stripping off the blubber, until we could make our measurements and get full data for the construction of life-size models. The big cow measured 53 feet from tip of nose to notch of tail, which is equal to the maximum size for this species as noted by F. S. True in his book on "The Right Whales of the Western North Atlantic." The whalebone of this individual is fully seven feet long, also a record size, and is unusually perfect. The calf measured about 40 feet in length and had whalebone three feet long in the longest part.

"The following day the whalers finished removing the blubber, and then we set to work cutting out the skeleton. This was a large undertaking since we were obliged to remove the flesh in rather small pieces in order not to lose any of the bones, and our labor was rendered more difficult and trying by the waves that broke over us most of the time while we were at work, and froze in picturesque icicles that we could not appreciate at the time.

"Wednesday we had to face a new difficulty, for the surf became heavy and began to bury the remaining bones of the Amagansett whale in the sand, whence it would have been impossible to recover them. We waited anxiously for low tide Thursday and then hastily constructed a rude cofferdam using ribs for piles and whale flesh for filling. This contrivance, with one man actively bailing water and another vigorously shoveling sand, enabled the rest of our force to secure the last bones of the great beast, after two hours of the hardest work imaginable.

"The Wainscott whale, being smaller and higher on the beach, had already been secured and nothing remained to do but to clean the bones thoroughly and ship them to the Museum, which finished a week of hard but satisfactory work."

In spite of its commercial value, the whalebone of the Amagansett specimen, weighing some 1700 pounds, was purchased by the Museum and will be mounted in proper position in the skeleton or the model. The whole series of whale material now at the Museum will, when mounted, make an exhibit the equal of which in its line is not yet to be found in this country. The whalebone of the Wainscott whale was not secured by the Museum.

THE EGYPTIAN EXPEDITION.



ENCOURAGING news comes from the expedition into the Desert of Fayoum for vertebrate fossils. Professor Osborn writes, under date of February 11, that help from Lord Cromer and Director H. G. Lyons of the Geological Survey has supplied the American Museum party with full equipment of tents, tanks and other supplies needed for life in the desert. He says, in effect: "In five days instead of the ten days estimated beforehand we were ready, and I despatched Daoud Mahommet, who had been out every year with Beadnell and Andrews of the British Museum, around by rail to Tamia on the western edge of Fayoum with instructions to camp near the most easterly of the bone pits, which is about forty miles from the railroad. We left the Gizeh pyramids, twelve miles from Cairo, on Thursday morning, January 31, and that evening camped near the Sakhara pyramids, the tombs of ancient Memphis. Mr. H. T. Farrar, who had been detailed by Doctor Lyons to accompany us, joined our party here; so we were eight tents and twenty-one camels strong,— quite a big caravan and most picturesque.

"Friday we went beyond the Dashur pyramid, and the following night we camped at Lish't, where the Metropolitan Museum excavations are in progress under the direction of Doctor Lythgow. Sunday we traversed the desert and reached Tamia on the edge of the Fayoum oasis, and Monday night we made our first desert waterless camp. Tuesday, February 5, just a month from leaving New York, we reached our main desert camp and found that the men who had been sent around by rail had arrived two days before. We have secured seventeen diggers and eight camels for the transportation of water and supplies, and our camp of four tents under the charge of Mr. Granger and Mr. Olsen is between the two easterly bone pits.

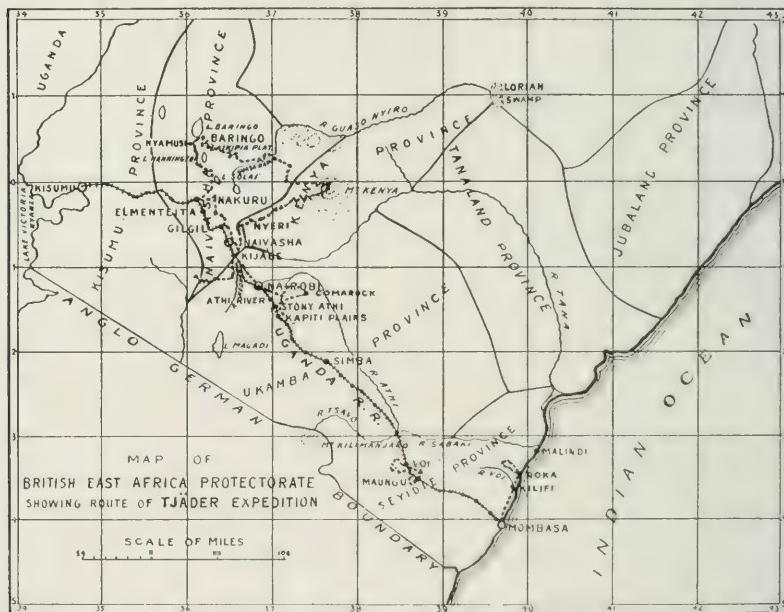
"The country has been thoroughly prospected on the surface, but careful and extensive quarrying with the thorough methods which we have used so successfully in our own West is certain to produce good results. We have the best trained and the largest force of Egyptian workmen which has ever been at this locality, and our first search has produced several apparently new members of the smaller fauna, together with excellent jaws and isolated teeth and bones of the larger forms."

THE RESULTS OF THE TJÄDER EXPEDITION.



THROUGH the Tjäder expedition to British East Africa, mention of which has been made from time to time in the pages of the JOURNAL and the narrative of which has become familiar to the Members through the lecture by Mr. Tjäder on February 28, the Museum has come into possession of a rich collection of zoölogical material comprising about 450 specimens among which are representatives of the principal types of the mammalian and bird fauna of that part of the continent.

Our Members will recall that this expedition left New York March 1, 1906, and proceeded to Mombasa on the east coast of Africa, where



MAP OF PART OF BRITISH EAST AFRICA

Dotted line and railroad show route of Tjäder Expedition

the Uganda railway was taken for the journey into the interior. Side trips were made from several points on the railway, and at the Athi river near Nairobi the party, consisting of Messrs. Tjäder and Lang and their assistants, began camping. Hunting was prosecuted for



H. Lang, Photo.

PART OF TJÄDER EXPEDITION CROSSING A RIVER

Near Nyamusi (Baringo).



R. Tjäder, Photo.

ELEPHANT TAKEN NEAR NAKURU

The animal was 22 feet, 8 inches long, and his shoulder height was 10 feet, 4 inches. The tusks are 6 feet, 4 inches long and weigh 160 pounds.



H. Lang, Photo.

GIRAFFE SEVENTEEN FEET TALL

Obtained near Maungu. Photograph made after the animal had been shot, but before it fell.



H. Lang, Photo.

RHINOCEROS, 10 FEET 8 INCHES LONG, 5 FEET HIGH

Secured in the Valley of Solai, north of Nakuru

about four and a half months over a route which is indicated on the accompanying outline map of British East Africa.

A magnificent old bull Giraffe which stood with his head seventeen feet above the ground when alive, was secured only an hour's march from Maungu station on the line of the Uganda railroad. Another and smaller one shot near Comarock, Athiplains, 200 miles from Maungu, is interesting as showing the local range of the animal. A fine bull Rhinoceros was obtained in the Solai Valley, north of Nakuru and an unusually large Elephant, which goes as a trophy to Mr. Samuel Thorne, through whose generosity the expedition was made possible. The series of larger animals is completed by a cow Buffalo. The Buffalo are rather scarce, and they are so well protected that only the scientific collector can procure permission to shoot any. It is fortunate that the complete skeletons of the animals intended for mounting have been obtained and that the hides were taken off entire and not in several sections according to the usual practice. The weight of such hides is surprising, twelve to sixteen porters being needed to carry the fresh skin of an animal like the big Giraffe or the Rhinoceros, which weighed between 800 and 900 pounds. Some portions of the skin were two inches thick and it was necessary to pare as much as possible from the inside to prevent deterioration and permit subsequent manipulation for mounting. When ready for shipment the Giraffe skin weighed 120 pounds and that of the Rhinoceros 85 pounds.

Eight Zebras from different parts of the region and fifteen different species of Antelope are in the collection. The Antelope are particularly interesting and include excellent specimens of the Eland, the White-bearded Gnu, the Oryx, two kinds of Hartbeest, the Waterbuck, Reedbuck and Bushbuck, and several of the tiniest forms, such as *Cephalophus*, *Neotragus* and *Nanotragus*, of which the last is but eighteen inches long when full grown. The Waterbuck will make a particularly effective group, on account of the naturally proud aspect of the animals in life.

Mention should be made too of the specimens of Warthog, Spotted Hyæna, Jackal, Aard Wolf and Cerval Cat, while the Colobus Monkey noted for its beautiful fur, and other species of the quadrupeds are represented by several specimens each. Taken together the trophies of this expedition supply exceptionally fine material of species which have hitherto been wholly lacking in the Museum collections.

Much interesting ethnological material was brought back by Mr. Tjäder. It consists of charms, ornaments, weapons, cooking utensils and other articles from several tribes. Long battle spears, ugly arrows bearing rows of jagged points and slender clubs with egg-shaped stone heads are among the things that show how the tribesmen contend with their enemies or attack wild animals.

The photographs illustrating this brief note were taken by Mr. Herbert Lang, the museum taxidermist who accompanied the expedition, and are used through the courtesy of Mr. Tjäder.

MUSEUM NEWS NOTES.



MEMBERS, and especially those having children, when visiting the Museum should be sure to avail themselves of the services of the instructor, Mrs. Agnes L. Roesler, who has recently been appointed by the Museum for the purpose of assisting Members and their guests.

On coming to the Museum, Members may call for Mrs. Roesler, and she will accompany them through the exhibition halls and into the laboratories, where they may see how the artificial flowers, glass models, ethnological and other groups, fossil animals and other specimens are prepared for exhibition. The children of Members may be left with the instructor, who will be pleased to spend an hour or two with them in the exhibition halls, entirely at the convenience of their parents.

AMONG prominent foreign men of science who have been at the Museum during the past few months may be mentioned, Canon ARMOUR, of Worcester, England, Dr. T. TSCHERNYSCHEW, Director of the Imperial Geological Survey of Russia, Dr. E. TIETZE, Director of the Imperial Geological Survey of Austria, Prof. A. C. HADDON of Cambridge University, England, Prof. A. OSANN, Freiburg, Dr. T. IKI, of the Imperial Geological Survey of Japan, Prof. BRUNO WEIGAND, Strassburg, Prof. T. W. E. DAVID, University of Sydney, New South Wales, Dr. A. PLAGEMANN, of Hamburg, Profs. HUGO ERDMANN, E. PHILLIPPI, G. W. VON ZAHN and Dr. HECKMANN, of Berlin, Germany, Dr. H. SJÖGREN, Royal Natural History Museum, Stockholm, Dr. V. HACKMANN and Dr. W. WAHL, of Helsingfors, Dr. V. SABITINI, Rome, Italy, Mr. C. RAMALINGA REDDY, St. Johns College, Cambridge,

Eng., Dr. B. von INKEY, of Tarótháza, Hungary, and Prof. D. RANDALL-MACIVER, of Oxford University, England.

MR. FRANK M. CHAPMAN left New York on March 8 in quest of certain birds whose nesting habits are inadequately represented among our groups. He will visit Florida, the Bahamas and Louisiana before returning to the Museum.

COMPLETE sets of the following publications have been added to the Library since January 1, 1907:

Atti della Società Romana di Antropologia in 12 volumes;
Annali del Museo Civico di Storia Naturale di Genova in 40 volumes;
Journal of the Maine Ornithological Society in 8 volumes;
Journal of the Anthropological Institute of Great Britain and Ireland
in 32 volumes;
Froriep's Notizen in 85 volumes;
Isis von Oken in 41 volumes;
Recueil Zoologique Suisse in 5 volumes;
Revue Suisse de Zoologie in 10 volumes;
Bulletin de la Société Malacologique de France in 7 volumes;
Monthly Microscopical Journal in 18 volumes;
Archiv für Mineralogie, Geognosie, Bergbau und Hüttenkunde in
26 volumes.

A special view of the skeletons of the Amagansett and Wainscott Whales, the securing of which is described in this number of the JOURNAL, was made in the west court of the building March 17, the day after their arrival at the Museum. The popular interest in the great animals, the larger of which exceeds in size any known dinosaur, was shown by the crowds of people that came to see the skeletons.

LECTURE ANNOUNCEMENTS.

PUPILS' COURSE.

- Mondays, Wednesdays and Fridays at 4 o'clock.
Friday, April 5 and 26.—“The Products of Our Mines.” By E. O. HOVEY.
Monday, April 8.—“Along the Historic Hudson.” By G. H. SHERWOOD.
Wednesday, April 10.—“Life in the Far North.” By H. I. SMITH.

Friday, April 12.—“New York City in Colonial Days.” By R. W. MINER.
Monday, April 15.—“The American Indians of To-day.” By G. H. PEPPER.

Wednesday, April 17.—“Commercial Centers of Europe.” By E. O. HOVEY.

Friday, April 19.—“Farming in the United States.” By G. H. SHERWOOD.
Monday, April 22.—“Travels in South America.” By BARNUM BROWN.
Wednesday, April 24.—“Natural Wonders of Our Country.” By R. W. MINER.

PEOPLE'S COURSE.

Given in coöperation with the City Department of Education.

Tuesday at 8 P. M. Illustrated. By MR. E. G. TEWKSBURY.

April 2.—“Asiatic-American Reciprocity.”

A course of four lectures on “The Evolution of the Japanese Nation” by Dr. William E. Griffis of Ithaca, New York.

April 9.—“Ancient Non-Mongolian Japan to 700 A. D.”

April 16.—“The Making of the Japanese Nation, 700–1200 A. D.”

April 23.—“Mediæval and Feudal Japan, 1200–1868.”

April 30.—“Modern Japan. The Restoration of the Mikado. Adoption of the Forces of the West. 1868–1907.”

Saturdays at 8 P. M.

Conclusion of a course of nine lectures on “Electricity and Electrical Energy” by PROFESSOR JOHN S. MCKAY of Brooklyn.

April 6.—“Relation of Electric Currents to Magnetism.”

April 13.—“Relation of Magnetism to Electric Currents.”

April 20.—“Direct Currents, Generators and Motors.”

April 27.—“Alternating Currents and Alternating Current Machines.”

MEETINGS OF SOCIETIES.

On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnaean Society, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.



THE VICTORIA FALLS OF THE ZAMBEZI RIVER

More than a mile wide and 400 feet high. Only part of the width shows in the view

The American Museum Journal

VOL. VII

MAY, 1907

No. 5

THE DOUGLAS AFRICAN COLLECTION.



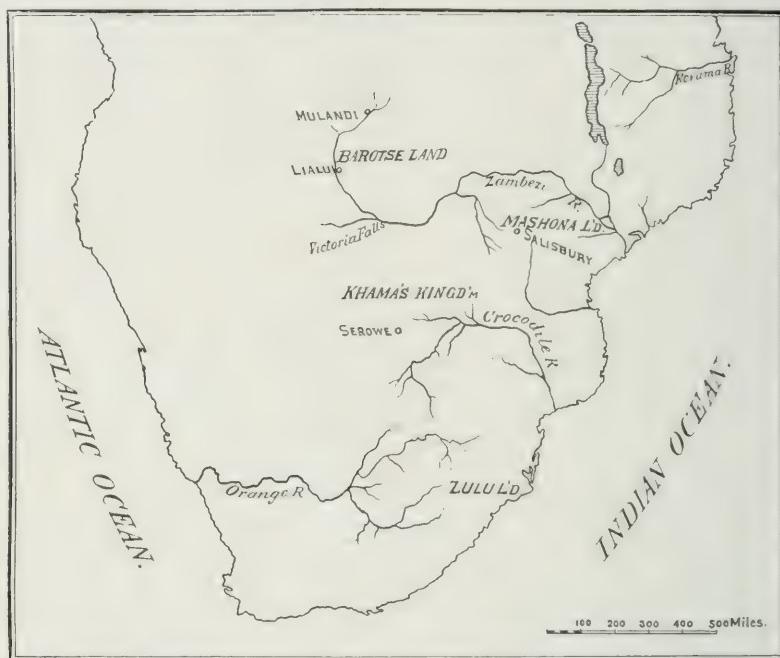
THROUGH the generosity of Messrs. Percy R. Pyne, Cleveland H. Dodge and Arthur Curtiss James, the Museum has acquired a large ethnological collection which was made recently by Mr. Richard Douglas in south central Africa. This acquisition is of particular importance, not only on account of the great amount of material received, but also because heretofore the Museum has had few and only isolated specimens from the Dark Continent.

Africa is the primitive home of the negro race, representatives of which have been more or less a factor in the Occidental civilized world since the early days of Egypt. Upon the royal tombs and temples of Karnak, Luxor and Thebes we find in color and relief triumphal and other processions in which appear now and again among the captives or the slaves the unmistakable facial features presented by the negro of today, showing that there has been practically no change for thousands of years. The permanence of these characteristics is surprising to those who believe man to have come into existence within the last eight or ten thousand years of the earth's history. In spite, however, of this conservatism in feature, hair and complexion, the black peoples of Africa present great variety of anatomical, linguistic and tribal differences, ranging from the illusive pigmy of the Congo forest to the tall, clean, light colored Zulu of the South.

Along the Upper Nile and westward along the borders of the Sahara there is a broad belt of dark-skinned peoples where the lighter Arabian blood of the northeast gradually shades into the black of the Congo and the South. The arts and culture too of the Mediterranean states that followed the Arabic intrusion were gradually overwhelmed by the great monotony of native African barbarism. Yet for centuries, possibly while the savages of the stone age were hacking each other to pieces in primeval Europe, the peoples of the Dark Continent were smelting and forging iron, cultivating their fields with iron hoes and rising against their enemies with iron spears and swords. Study of Africa proves

that an "iron age" is not of itself to be regarded as a guarantee of an advanced order of civilization. The effect of the use of iron implements is but one of the many interesting problems arising from the study of the Dark Continent, all of which render an ethnological collection from any of her people a matter of great educational value.

During the past year Mr. Douglas visited Barotse and Bechuanaland. As may be seen from the map, these territories occupy the entire central portion of that part of Africa lying between the southern borders of the Congo Free State and the Orange river. This region is cut into



two parts by the Zambezi river, well known for its beautiful Victoria Falls. All the interior of South Africa has been for some centuries the home of a large division of the so-called "Bantu" peoples, the dominant negro race. It is generally agreed that the Bantu originated somewhere near the head-waters of the Nile. As they increased in numbers, they migrated southward and eastward, dominating the whole continent from the Sahara to the Cape of Good Hope. The Bantu horde which rolled out from the north into the valley of the Zambezi and into the

A BECHUANA VILLAGE



Kalahari Desert, is chiefly known under the name of Bechuana. As a matter of fact, however, this name belongs to a very small group of tribes that drove out the original inhabitants, who may have been the Bushmen, and took possession of their lands. The best known divisions of these Bantu intruders are the Bechuana, Zulu, Mashona, Barotse and Basuto.

Mr. Douglas writes in part regarding the expedition as follows:

"I reached Cape Town, S. A., about May 1, leaving directly for Bulawayo, South Rhodesia, arriving there May 5. After a short stay I left for Bechuanaland and arrived at Palapye Road at 10 o'clock in the evening of May 15. Early next morning I arranged with the Bechuana Trading Company for transportation to Serowe, King Khama's "stardt" or native village, located some 60 miles from Palapye Road, and set out, arriving on the third day at 1 P. M. The following day I called upon the king but learned that he was away, inspecting one of his cattle posts, and I did not meet him for three days. Our meeting was at six o'clock in the morning. The native custom is for all the Chief Headmen to meet at daybreak in the "kglotta" or Court Yard, to dispose of the native criminals, brought in the day before for trial. This meeting, as well as witnessing the disposition of criminals proved very interesting and also afforded me the very best opportunity of getting down to business with the king and all his people. After I had been introduced to the king by one of his grandsons and had made my purpose known, I was received very cordially and the king gave out word to all his chiefs to give me all the help I required. In this way I was enabled to make my collection without further trouble. The king gave me free transportation to the railroad for all my material, and after numbering and packing my collection I started upon my return journey.

"My next stop was at Salisbury, whence I went to the Mazoi District, Mount Darwin and the Inyanga Districts, all in Mashonaland. My collections here were not large. After packing and securing some twenty-five carriers, I left for Salisbury, camping with my carriers every night. In three weeks time I had covered nearly 500 miles on a bicycle, traveling over a very mountainous country with only Kaffir paths to follow. Upon my return to Salisbury I repacked my collections, paid my carriers and left immediately for Bulawayo.

"Upon the 20th of July I left Bulawayo for Barotse land, King Lewanika's Country, for whom I have acted as confidential Agent for the past four years. Upon my return to Africa, I had notified King

Lewanika that I intended visiting his country as soon as he could get boats down to Livingstone to take me up the river to Lialui, his capital. Upon my arrival at Victoria Falls, July 21, I immediately went to Old Livingstone to see Imasho, the king's Headman to see if the boats were waiting, but found that they were still on their way down, he having heard by a runner or messenger that the king was sending for me.

"That evening upon my return to the Falls Hotel I found a message telling me that the Induna in charge of the boats had arrived. I immediately made ready to leave for Old Livingstone. The next morning, July 28, I was up at break of day and found the king's carriers waiting for me. There were sixteen in all, eighteen including my interpreter and cook. Upon reaching Old Livingstone, which was late in the day, I camped for the night, making plans to leave at daybreak for the boats, which had to be left five miles farther up the river, on account of the dangerous rapids. We reached the boats at 10 A. M. and left immediately for Kazeungula the first important native village on our route, although there are many small kraals between. Only one white man trades with the natives in that village. After leaving Kazeungula and paddling two days we came to the great game country. Here I camped three or four days to secure food for the natives.

"August saw us again on our way up the river toward Lialui. After three days we reached Nilesia, which to my mind is the most beautiful spot on the whole river. Here the country is covered with thick bushes and abounds in lions. We could hear them roaring long before dark, and they kept up their noise all night. We had to keep big fires going to keep them away. Early next morning a Dutch transport rider came to my camp and asked me to assist him in hunting some lions which had killed five of his oxen. That night we took up the spoor and after following it for four miles, we came upon one lion, one lioness and two cubs. We got the lion and both cubs, but the lioness, although badly wounded, got away into the tall grass. We did not go after her, as it is a very dangerous undertaking to follow up a wounded lion, a thing that only inexperienced hunters will do, as there is only one chance in ten of getting away alive. After removing and caring for the skins, we proceeded on our journey, but since we had many rapids to cross, our progress was very slow. We reached more rapids next day about noon; here we had to take everything out of the boats and pull them overland, a distance of 300 yards. This took us until 4 o'clock, and we pitched



A GIRL GRINDING KAFFIR CORN

camp some four miles further up the River that night. On my way to this camp I collected many stone implements.

"We reached Lialui late in the afternoon of Thursday, August 28, having been one month in covering the 500 miles from Victoria Falls. During my stay at Lialui from August 28 to September 22, I was with the king daily and by his influence secured many fine specimens."

All the collections made by Mr. Douglas are now in the Museum. He has lived in South Africa for about twenty years and is not only familiar with the natives but also able to speak some of their languages. With the collection are numerous notes and other information of considerable ethnological value. The larger part of the collection is from Barotseland.

The Barotse kingdom extends from the vicinity of Victoria Falls on the Zambezi to the Congo Free State and eastward to the land of the Bashukulombwe, one of the recent conquests of the present king. It is now in control of King Lewanika under the protection of the British Government. While the Barotse are evidently a part of the great Bechuana group, their real relationship is not well known. They appear to be closely related to the Zulu, but they are generally looked upon by other Bechuana people as being the oldest original stem, from which the others sprang. However this may be, they are in many respects the strongest and most powerful group in Africa. Their history is exceedingly interesting and suggestive, one incident of which may be mentioned here. About 1835 the chief of Makalolo, a branch of the Basuto, extended his empire to the borders of the Barotse, made war upon them and soon brought them under his control. These foreign kings ruled until 1879, when the Barotse revolted and massacred all the Makalolo they could find. During their subjection, however, the Barotse had learned the Makalolo language, and that is still the official tongue. Thus we have the people of a kingdom speaking a foreign language to the exclusion of the native tongue, the whole change having taken place within a period of forty-four years. Since in other respects the history of the Barotse is similar to that of other native African tribes, the suggestion is that many times in the past peoples may have changed their language and customs in an equally rapid manner.

The greater part of the Bantu people in South and East Central Africa, support themselves by cattle raising, while the other Bantu tribes occupying the north and west portions of Africa support them-

selves by agriculture. The Barotse are situated on the dividing line between these two types of civilization, consequently we find what may be expected,—a people who are engaged in both agriculture and cattle raising. The raising of cattle, however, is almost entirely in the hands of the king and the various chiefs, practically no one being allowed to own cattle except the few head men. These cattle are the chief source for revenue for the native kingdom. The food of the common people is chiefly milk and the products of their gardens. While the men sometimes clear the fields, agriculture is almost entirely the work of the



A HOE FROM KHAMA'S KINGDOM, BECHUANALAND

The blade is about 2 feet long

women. The chief agricultural implement is the hoe. The hoe of Bechuanaland is a large leaf-shaped iron blade in a short wooden handle, while the hoes in Barotseland have small thin metal blades, similar to modern American hoes. The products of their fields are Kaffir corn (a kind of millet), Indian corn and yams. The villages are groups of circular, thatched huts, often clustered around the cattle kraal of a chief.

These people are skilled in the manufacture of pottery and wooden vessels. The wooden vessels are carved from tree trunks, hollowed out with the adze and finished with a peculiar hooked knife. The



BASKETS, POTTERY, GOURDS AND WOODEN WARE

From Kathiawar and Khaman's Kingdom

surface of the vessel is burned with a hot iron and afterwards smeared with hot bee's wax, which is thoroughly rubbed into the wood, giving the surface a dead black finish. Perhaps the finest type of wooden vessel is the oval flat tureen with a lid. On the top of the lid is usually a carved elephant, hippopotamus or other large quadruped.

Pottery is of several forms, varying from large handsome jars to small drinking cups with handles. The most common type, however, is the water bottle. Two kinds of clay are used, which are mixed in certain proportions and modeled by a combination of the coil and beating processes. In the beginning, the bottom of the pot is fashioned in a shallow basket-work tray, which is turned with the left hand somewhat after the fashion of a potter's wheel. All of the pottery in the collection is red, but decorated with triangular designs in black or dark red. These designs are quite simple and consist usually of single or double rows of equilateral triangles. The same sort of decoration is applied to wooden ware, the triangles being produced by scraping away the previously blackened surface of the wood. The people from whom these collections came also manufacture black pottery of excellent quality, but this art is fast disappearing and no specimens could be obtained.

Wood carving is rather highly developed, the best types of which are to be seen in stools and sticks. While the common people usually sit upon the ground or upon mats, chiefs and other prominent people sit upon low wooden stools. These stools are usually cut from a single block of wood. One very common type is that in which the base and the top of the stool are joined by a human figure, supported behind by two or three upright posts. These figures always have the attitude of



A CARVED WOODEN STOOL

About 14 inches high

supporting the top of the stool upon the head. In some stools however, these figures are wanting, and the decoration consists of small geometrical designs arranged symmetrically on the posts. Wooden pillows are similar in form to the stools and the decorations are of the same type. Single pillows are usually used by the unmarried, while married persons use a double pillow, joined by a wooden chain cut from a single piece of wood. Aside from these, the collection contains a great many other carved objects such as a wooden figure, idols, combs for the hair and ear ornaments. Among the things deserving special mention, are the knob-sticks from Mulandi, which have a finish and execution far superior to anything else in the collection.



CARVED KNOB-STICKS FROM MULANDI

The collection is rich in basketry and matting. One of the most remarkable things about this basketry is the great variety of weave. In it we find wicker, checker, twill, close twine, open twine, twilled twine, three-ply twine, ti twine, one-rod coil, bifurcated coil, grass coil, open grass coil, coil without foundation and wrapped weave. Of these, the one-rod coil and open twine are the finest types. The decorations are in dead black, produced by steeping the material in marsh mud. It is of special interest to find the ti weave here, since this has heretofore been considered peculiar to the Pomo Indians of California. The collection contains one large storage basket similar to one shown on page 81. All such baskets are of the open grass coil type. The designs upon mats and baskets are triangular like those upon pots and wooden



MAKING A LARGE STORAGE BASKET

A Basuto man is in the basket

vessels, though occasionally the forms of animals and men are found upon baskets.

In south and central Africa the Barotse have great reputation as workers in iron, but their implements are crude. The smelting is done with a rude furnace, and the forging with rude bellows made of skin, stone anvils and in some cases with stone hammers too. Nevertheless with these crude tools the native blacksmiths turn out some excellent knives, daggers, axes, spears and swords. The collection contains a great variety of iron tools, spears and ear ornaments, illustrating quite completely the native iron industries.

A very conspicuous character in religious and ceremonial activities in all African tribes is the so-called witch doctor, who is in reality a priest. Such men have various outfits, consisting of charms, medicines and regalia, but in almost every case they have upon a string two slender pieces of ivory representing women and two hoofs of some ruminant representing men, together with two or more vertebrae of a monkey or other small mammal. The vertebrae are said to represent the spirit of the witch, as it is sometimes called, by whose help the priest accomplishes his work. This collection contains one complete witch doctor's outfit together with other medicine articles. The witch doctor is a powerful man in the community and performs various functions. Besides curing diseases, he discovers by magic processes the identity of criminals and traitors, directs all ceremonies and acts as chief councilor to the king or chief. The significance of his name is probably due to a widely spread belief in Africa that every death is the result of the magic power of some living person or witch. As a result of this the priest or witch doctor is called in to investigate every death, and as a rule he names some individual who is held responsible. It goes without saying, that witch doctors and chiefs take advantage of this custom to get rid of troublesome individuals. This is one of the many dark sides to the Dark Continent.

There are many other interesting groups of objects in this collection, among which may be mentioned native fibre, foods, costumes, weapons, pipes and musical instruments. The series of drums is particularly fine. The Museum now has a good beginning toward an African hall in which will be shown the original culture of the great Negro branch of the human family.

CLARK WISSLER.

DEPARTMENT OF MINERALOGY.



MONG recent additions to the cabinet of minerals the new form of Beryl from near Spruce Pine, Mitchell Co., N. C., merits notice. This is an unusual tabular form of the mineral and was discovered by Mr. H. W. Williams. For some time it escaped proper identification on account of its peculiar crystalline form. The crystal consists of a broad basal plane and a hexagonal pyramid, the two united in thin plates inclosed in a coarse granitic matrix. Professor Moses of Columbia University has described this remarkable occurrence. The specimens are valued as crystallographic novelties.

A really superb specimen of Polybasite has been obtained through the Bruce Fund. The specimen was found in Sonora, Mexico, and brought to the Museum by Mr. A. B. Frenzel. It is a splendid group of lustrous, intersecting plates, the plates being tabular prisms with pyramidal edges.

The third notable addition is a unique and particularly beautiful specimen of crystallized Native Copper. It is a thicket of nail-like, elongated prismatic crystals, possibly tetrahedrons, with minutely dentate edges, of brilliant surface, and associated with thickly clustered individual crystals. This specimen came from Bisbee, Arizona, where it was found in a pocket with other similar specimens of an inferior quality. It is implanted on a limonitic base. The specimen is not large, but its effectiveness as a mineral development is remarkable.

A specimen of crystallized Andorite from Oruro, Brazil, also secured through the Bruce Fund, is astonishingly good. Large, heavy tables in this specimen replace the diminutive crystals usually associated with this interesting sulph-antimonide of lead and silver. Pink Beryls from Haddam, Native Lead (F. A. Canfield) from Sweden, Serpentine and the famous Asbestos (Chrysotile) from the Grand Canyon of the Colorado (F. F. Hunt), with a series of attractive Japanese specimens, obtained by exchange with Professor T. Wada of Tokio, Japan, should also be mentioned.

L. P. G.

MUSEUM NEWS NOTES.

THE MUSEUM is now open free to the public on every day of the week. This important change in the policy of the institution has been made by President Jesup in order to extend its usefulness as widely as possible, it being felt that the reservation of two days in the week, as heretofore, for Members and students was depriving thousands of people of the privilege of seeing the collections, without compensating advantages to Members, while students are now amply provided for at all times in other ways.

PROFESSOR H. F. OSBORN returned March 31 from his trip to Egypt to organize the work which the Museum is carrying on there in the search for the remains of the ancestors of the Elephant and other mammals. Messrs. Granger and Olsen have remained in the desert of Fayoum to prosecute the excavations. Professor Osborn reports excellent initial success and bright prospects.

MISS ADELE M. FIELDE has presented to the Department of Ethnology a series of twenty-seven Chinese paintings representing various mythical and real scenes from Chinese life. These paintings were made by a native artist in 1888 at the suggestion of Miss Field and were used by her as illustrations in her books, "Chinese Night's Entertainments" and "Corners of Cathay."

THE Department of Ethnology has recently received from Mr. Edward J. Knapp a series of wooden masks from the Eskimo of Point Hope, Alaska. Among them are several interesting portraits, done with remarkable skill, and several ceremonial masks with markings representing the flukes of the whale.

DIRECTOR H. C. BUMPUS represented the Museum at the ceremonies connected with the dedication of the new buildings of the Carnegie Institute, in Pittsburgh, April 11-13.

DR. ALLEN represented the Museum at the spring meeting of the National Academy of Sciences in Washington April 16 to 18.

ELABORATE preparations have been made by the New York Academy of Sciences for the appropriate celebration, on May 23, of the two hundredth anniversary of the birth of the celebrated Swedish naturalist, Linnaeus. The exercises will begin in the morning at the American Museum of Natural History with addresses and an exhibition of the animals, minerals and rocks first classified by Linnaeus; will continue in the afternoon at the Botanical Garden and Zoölogical Park, with addresses and suitable exhibits of plants and animals and the dedication of the Bridge, and will be concluded in the evening with simultaneous exercises at the Museum of the Brooklyn Institute, Eastern Parkway, and at the New York Aquarium in Battery Park. The exercises at the Museum will include, at 11 o'clock, an address by Mr. Archer M. Huntington, President of the American Geographical Society, on "North American Geography at the Time of Linnaeus" and one by Dr. Joel A. Allen, Curator of Mammalogy and Ornithology at the Museum, on "Linnaeus and American Zoölogy," while Dr. E. O. Hovey, Secretary of the New York Academy of Sciences, will read letters concerning the anniversary from other societies.

A FINE collection of European Myriapods, comprising 238 species has recently been acquired by the Department of Invertebrate Zoölogy, They were collected by Dr. Carl W. Verhoeff of Dresden, Germany, and embrace specimens from Germany, Austro-Hungary, Greece, the Pyrenees, European Turkey, France, Switzerland, Portugal, Italy, and Norway, together with a few from Tunis (Africa). The peculiar animal forms comprised in the class *Myriapoda* are familiar to all under such names as centipedes, millepedes and "thousand-legged worms." Like the true worms their bodies are long, cylindricial or flattened, and they are divided into a varying number of ring-like segments. They differ from the worms, however, in possessing one or two pairs of jointed legs for each segment, while their jaws, antennæ and internal organs closely resemble those of insects. Standing thus as an intermediate or transitional link between these two groups, myriapods are of peculiar interest to biologists. The centipedes, which differ from the millepedes in having but one pair of legs for each segment instead of two, are carnivorous and kill the insects upon which they feed by their poisonous bite. The poison also serves as a protection against enemies. The millepedes on the other hand are vegetarian in their habits, and

therefore harmless, though some species are obnoxious to farmers because of the damage they work to crops.

MR. FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology, spent a fortnight during April visiting several of the Bahama Islands for the purpose of collecting nests, eggs and young of certain birds for the habitat groups now being prepared at the Museum. The authorities of the Carnegie Laboratory at Dry Tortugas, Florida, placed at Mr. Chapman's disposal the yacht "Physalia" and Dr. A. G. Mayer, director of the laboratory, accompanied him on the trip.

MR. J. D. FIGGINS, of the Department of Preparation and Installation, left New York on April 6 for Key West, Florida, where he will join Mr. Chapman for additional field work in Florida. From Florida the expedition will go to Louisiana.

THE Department of Mammalogy has recently acquired by purchase a collection of mammals from China. The series includes 106 specimens, mostly of species the size of a Hare or larger, of which 43 are from the Island of Haiman and 63 from the interior of China, near the foot of the Taipashiang Mountains. The latter are all new to our collection, and the Haiman specimens do not duplicate the material previously received from that island.

ON March 29 a delegation of about forty teachers from Buffalo visited the Museum and spent considerable time under guidance in studying the work carried on here in connection with the schools of this city. The system of lectures to children; the circulating nature study collections and other educational work of the institution were explained and demonstrated to the visitors.

THE National Kindergarten Association opens an exhibition at the Museum on May 2 which will continue through the space of three weeks.

THE next number of the JOURNAL will be issued in October.

MEETINGS OF SOCIETIES.

MEETINGS of the New York Academy of Sciences and Affiliated Societies are held at the Museum according to the following schedule:

On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnaean Society, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.

The programme of meetings of the respective organizations is issued in the weekly "Bulletin" of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with these circulars as they are published.

The meetings will be held throughout May and will then be discontinued for the summer, beginning again October 7 with the business meeting and section of geology and mineralogy.

SPECIAL NOTICE TO MEMBERS.

A LECTURE WILL BE GIVEN BY

COMMANDER ROBERT E. PEARY, U. S. N.

AT THE MUSEUM ON

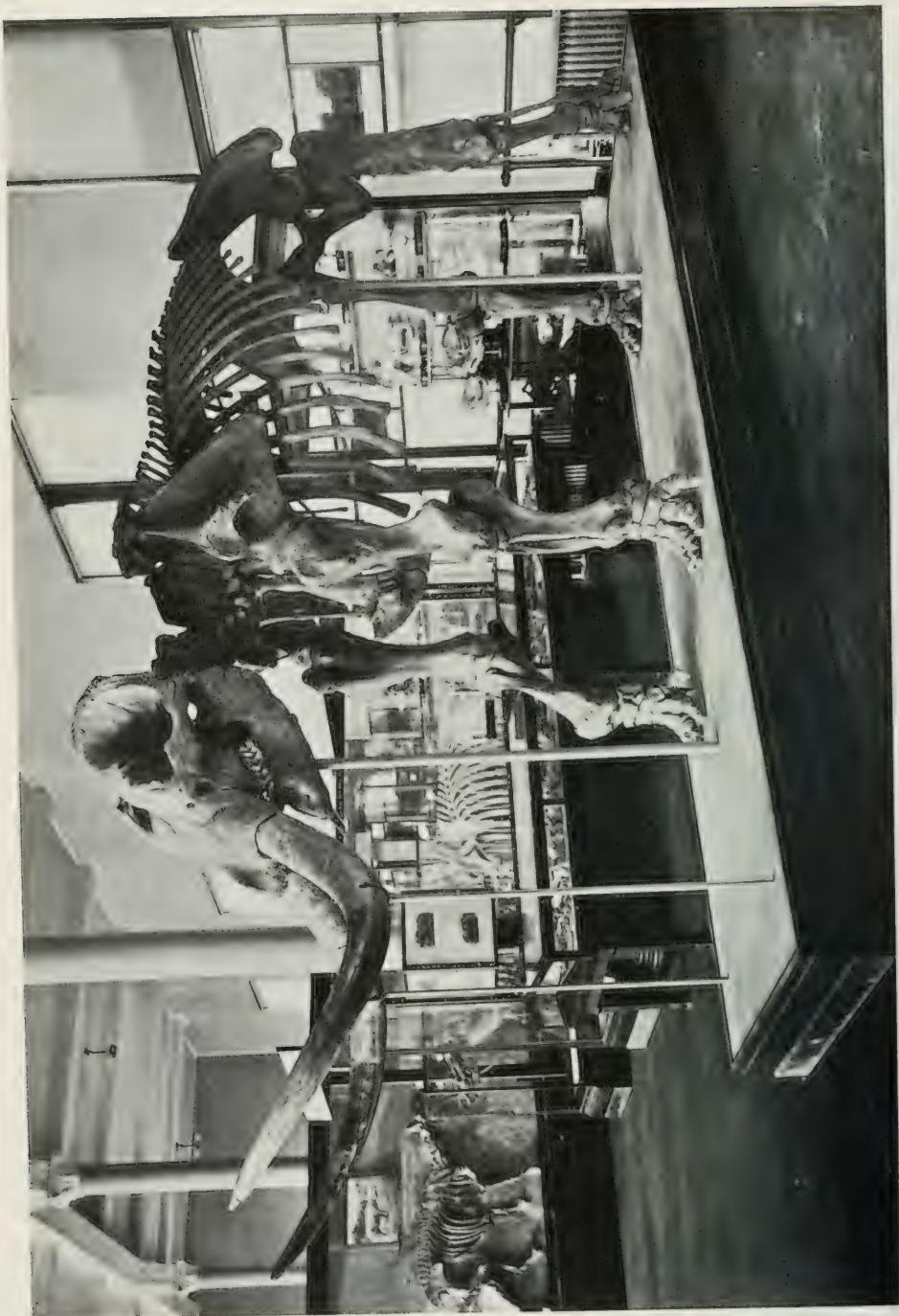
TUESDAY, MAY 14, 8.15 P. M.

REGARDING

"The Work of the Peary Arctic Club in 1905-1906 and the Plans for 1907-1908."

NOTE.—The Auditorium will be reserved for members of the Museum and their guests.

Special cards of admittance will be issued.



THE WARREN MASTODON. GIFT OF J. PIERPONT MORGAN, ESQ.
The skeleton of a single individual 14 ft. 11 in. long, 9 ft. 2 in. high

The American Museum Journal

VOL. VII

OCTOBER, 1907

No. 6

THE WARREN MASTODON.

N page 90 we present an illustration showing the Warren Mastodon, *Mastodon Americanus*, as installed in the Hall of Vertebrate Palaeontology. This famous skeleton, the most complete which has been found, was discovered during the unusually dry summer of 1845 on the farm of Mr. N. Brewster in a small valley near Newburgh, N. Y. The bones were in an almost perfect state of preservation, and from the fact that they were buried in a layer of shell-marl, they were not black, like most mastodon bones, but brown, like those of a recent skeleton which has been much handled.

The bones were exhibited for three or four months during the same year in the city of New York and in several New England towns and were then purchased by John Collins Warren, M. D., who was a distinguished professor of anatomy in Harvard University from 1815 to 1847. In 1846 the skeleton was mounted, under Professor Warren's direction, by N. B. Shurtliff, in Boston, and exhibited to Sir Charles Lyell, Professor Jeffries Wyman, Professor Louis Agassiz and thousands of visitors. In January, 1849, it was remounted and placed with other collections in the fire-proof building on Chestnut Street, Boston, subsequently known as the Warren Museum, which was erected expressly for it. Here it remained till 1906, when it was acquired with the remainder of the Warren collection of fossils and presented to the American Museum by J. Pierpont Morgan, Esq., as was noted in the JOURNAL for April, 1906.

A year has been devoted to the work of renewing and remounting. The skeleton was taken apart and the dark varnish with which the bones had been covered was removed by the use of alcohol. Thus the original color of the time of discovery has been regained. The tusks were erroneously reported to Professor Warren as being more than 11 feet in length, and were so described and restored by him; but the original length has been exactly determined by skillfully piecing the fragments together as 8 feet 6 inches. Twenty-three inches of each tusk is inserted

in the sockets, the projecting part measuring 6 feet 7 inches. The skeleton is so nearly complete that almost no restoration or replacement has proved necessary.

The following careful measurements will be of interest:

	Feet.	Meters.
Length, base of tusks to drop of tail . . .	14 ft. 11 in.	4.55
Height to top of spines of back at the shoulders	9 ft. 2 in.	2.80
Tusks: Length of right tusk, on outside curve	8 ft. 6 in.	2.59
Length of tusk exposed . . .	6 ft. 8 in.	2.03
Thigh bones: Length of right . . .	3 ft. 5 in.	1.05
Length of left . . .	3 ft. 6 $\frac{1}{2}$ in.	1.03
Pelvis, or innominate bones, width of . . .	6 ft.	1.83

The Mastodon was the contemporary of the Mammoth in North America during Pleistocene or early and middle Quaternary time. Comparison of this specimen with the fine skeleton of the Mammoth, *Elephas columbi*, standing near shows the likenesses and the points of difference between the two animals. The Mastodon was generally longer, somewhat lower and more massive than the Mammoth. The most easily recognized difference lies in the teeth, those of the Mammoth showing low narrow transverse ridges, while those of the Mastodon show strong cusps.

A BLACKFOOT LODGE, OR TEPEE.



THE illustration on page 93 shows the lodge, or tepee, of a "medicine man" of the Otter clan of the Blackfoot Indians of Montana which has been installed in the Hall of North American Indans, No. 102 of the ground floor of the Museum. The lodge was obtained on a Museum expedition in the field season of 1903 by Dr. Clark Wissler, Curator of Ethnology, who is a regularly adopted member of the Blackfoot tribe. The decorations on the outside of the lodge represent the otter (the insignia of the family or clan), together with mountains (the triangular points) and stars (the white circles), while the black and red at the top are the signs of night and day.

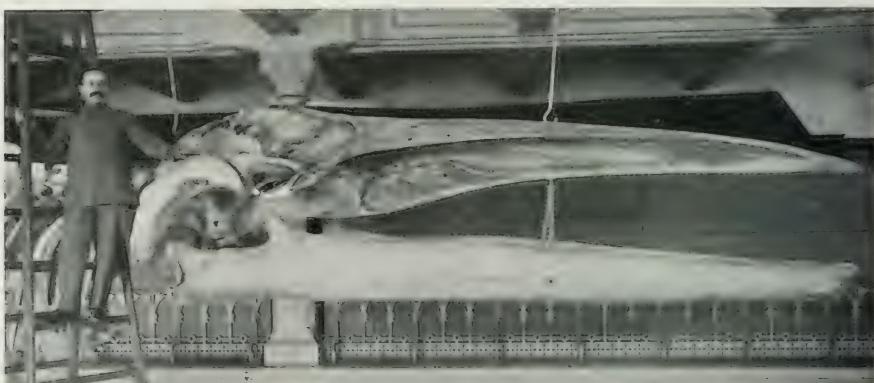
The arrangement of the interior is such as to indicate the family life of the medicine man. The woman wears a typical Blackfoot costume and is engaged in performing ordinary home duties. Behind the



A BLACKFOOT LODGE, OR TEPEE
Group in North American Indian Hall, No. 102 of the Ground Floor

household fire is the family altar, which is only a patch of ashes where offerings of incense are sprinkled at certain times upon live coals from the fire. At the left of the altar may be seen the usual tobacco board and pipe, the sign of hospitality. At the right and left are the beds, which are made of and covered with buffalo hides. At the head of each bed is the back rest, suspended to the tripods of which are the "medicine" bags containing charms for use on ceremonial occasions. Among other articles in the lodge are household utensils, a man's saddle and parfleche bags for storing pemmican.

The background of the Otter lodge is formed by another Blackfoot lodge-cover, which was obtained by Dr. George Bird Grinnell. Both lodge-covers are made from cowskin which has been tanned and prepared in the usual Blackfoot manner, as illustrated and described in the exhibits on the opposite side of the hall.

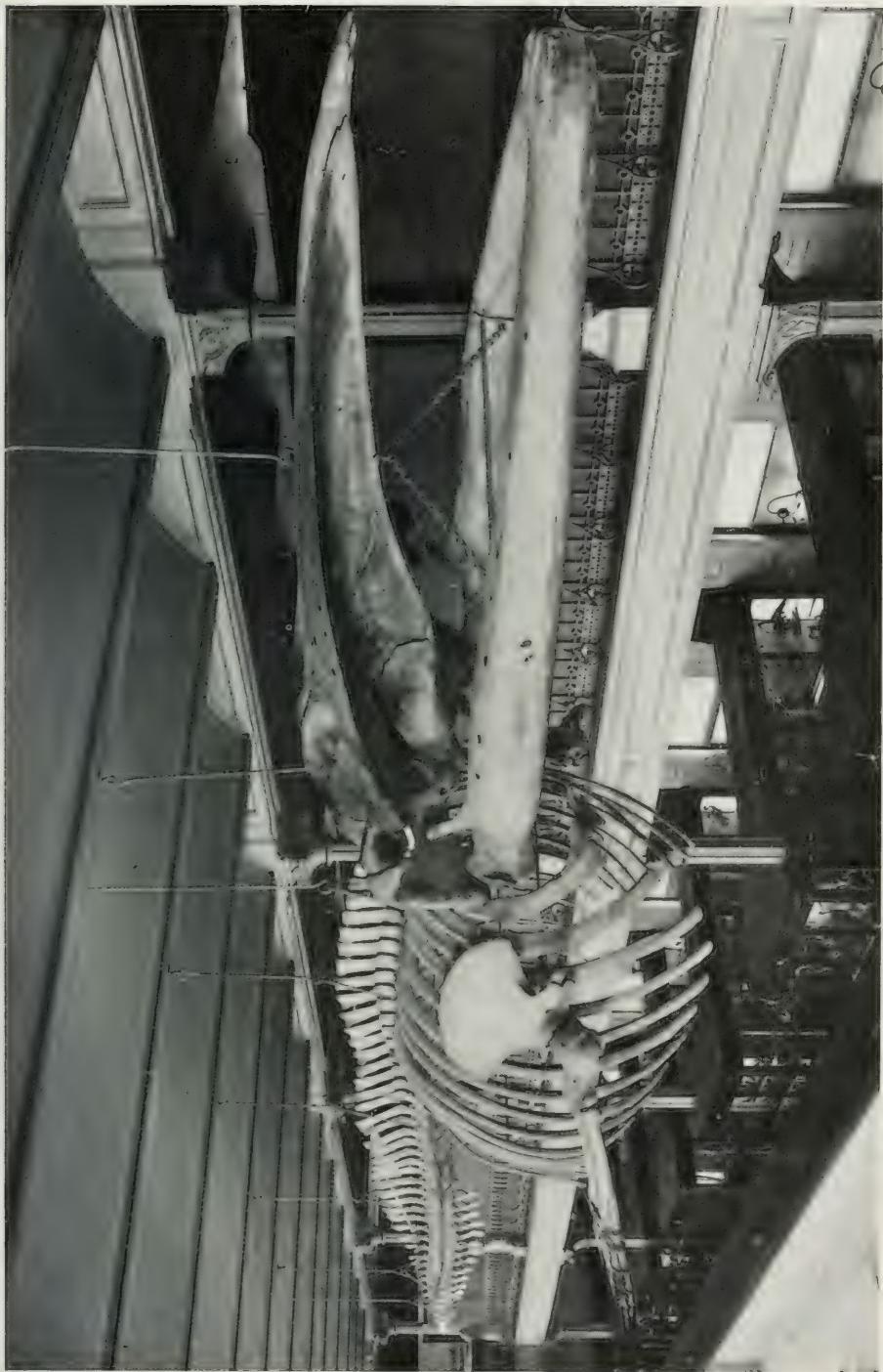


HEAD OF THE ATLANTIC FIN BACK WHALE

North Hall, No. 308 of the Third Floor

THE MUSEUM WHALES.

IMPORTANT additions have been made recently to the exhibition series of Cetaceans through means provided by George S. Bowdoin, Esq. Among these are the skeletons of three species of Whale which have been mounted in the East Mammal Hall of the gallery floor (Hall No. 306); a life-size model of the Atlantic Sulphur-bottom Whale-



THE ATLANTIC FIN BACK WHALE, OR RORQUAL, GIFT OF GEORGE S. BOWDOIN, ESQ

The skeleton is 62½ ft. long. North Hall, No. 308 of the Third Floor

installed in the same hall, and a complete skeleton of an Atlantic Fin-back Whale, or Rorqual, which has been suspended from the ceiling in the North Hall (No. 308) of the third floor.

The model of the Sulphur-bottom Whale represents an animal 76 feet long in the act of swimming. It consists of papier maché upon a wire shell which has been built over an elaborate frame of structural iron. The Sulphur-bottom is the largest of marine mammals and, in fact, of all known animals either living or extinct, sometimes attaining a length of 95 feet, with a girth of 39 feet and an estimated weight of 147 tons. This whale occurs in the Atlantic as well as in the Pacific Ocean, but it has become very rare in recent years on account of relentless hunting. It receives its name from the color of the under surface. The skeletons in the East Mammal Hall are of a *Hyperoödon* or Bottlenose Whale which was captured twenty years or more ago in the German Ocean, a *Globicephalus* or "Caá-ing Whale," as it is called by the Scotch, which was caught near the Faroe Islands, and a *Mesoplodon*, or Beaked Whale, which was taken near New Zealand in 1893.

The Fin-back Whale was captured off Provincetown, Mass., in April, 1896, and was about 63 feet long when alive. The maximum size for females of this species, which are larger than the males, is 70 feet. The Finback is still captured in considerable numbers off the coast of North Carolina and northward to Newfoundland. The whale is hunted by means of steamships and is killed with explosive harpoons. The commercial products obtained are whalebone of short length and coarse quality and oil, while the flesh and skeleton are used in making fertilizer.

AN EXHIBITION OF MUSEUM ART AND METHODS.



URING the month of May there was held in the East Mammal Hall an exhibition of drawings, paintings and models by the artists of the scientific staff of the Museum, showing the manner of preparing groups and figures for the public cases and illustrations for its scientific publications.

Among the features of the exhibition were studies in clay by James L. Clark for the mounting of the African Lion Hannibal and the group

of Mountain Sheep and the Whales. Dr. B. E. Dahlgren showed a group of the Snapping Turtle and enlarged models of several minute forms of animal life. W. C. Orchard exhibited models of Indian heads of different tribes, colored to illustrate several styles of face painting used in ceremonies like the Ghost, Corn and Buffalo dances. The heads themselves were modeled by Caspar Mayer, who also exhibited several groups illustrating the Eskimo and the African Negro.

Charles R. Knight was well represented with sketches in water colors, oils and clay for some of the famous restorations of fossil mammals and reptiles which he has constructed under the direction of Professor Osborn. Bruce Horsfall exhibited field studies made for the backgrounds of several Habitat Groups, particularly those for the Prairie Hen, the Pelican, the Wild Turkey, the Anhinga and the birds of the desert. Albert E. Butler and Miss French contributed models in wax of flowers, fruit and foliage of North American trees from the series in course of preparation for the Jesup Collection of Woods and a charming little group showing the South American Flying Lizard in its home surroundings of orchids, butterflies and moths. Ignaz Matausch showed some enlarged water color drawings and wax models of the brightly colored, peculiar and little known insects called Leafhoppers.

The exhibition also included water color landscapes and minutely accurate water color reproductions of moths and butterflies by Mrs. E. L. Beutenmüller, careful pen drawings of ants by Miss M. E. Howe, pen and wash drawings of vertebrate fossils by Mrs. L. M. Sterling, Erwin S. Christman and B. Yoshihara and pen drawings of Indian relics by W. Baake.

NEW FEATURES OF THE EXHIBITION HALLS.



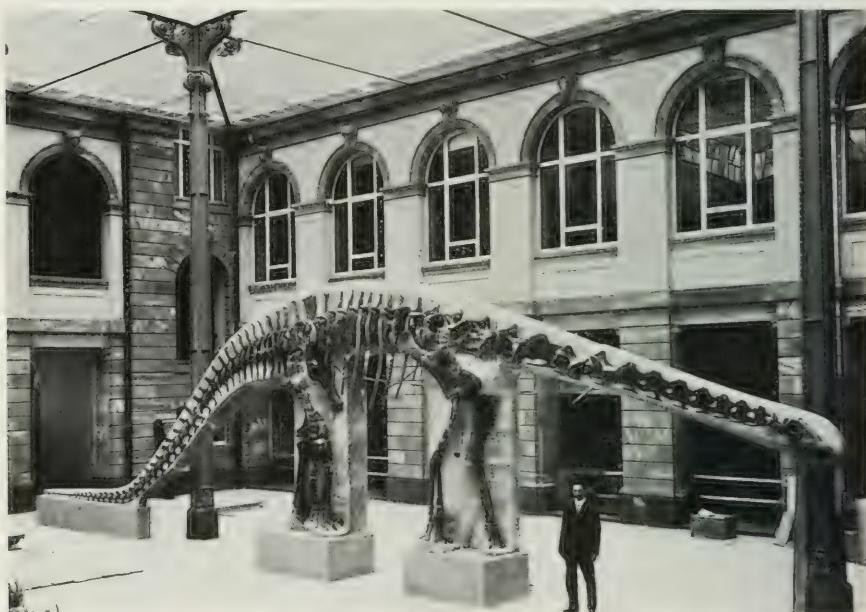
MONG the recently installed features of the exhibition halls the following may be mentioned: Department of Vertebrate Palaeontology,—Allosaurus group, Trachodon skeletons, Warren Mastodon skeleton, skeleton of Ichthyosaurus preserving impression and outline of body, additions to Horse Alcove, alcove labels; Department of Geology,—polished blocks of orbicular diorite and other rocks; Department of Mammalogy,—model of Sulphur-bottom Whale, skeletons of Atlantic Finback and other whales; Department of Ornithology,

— the Wild Turkey group, the group of Feeding Birds; Department of Ethnology,— Blackfoot lodge, Maori heads, Japanese reception room; Department of Invertebrate Zoölogy,— enlarged models (75 diameters) of the Malaria Mosquito, model of the North Atlantic Squid, aleove labels on glass.

A DIPLODOCUS FOR THE FRANKFURT MUSEUM.



HE illustrations on this page and the following are of the new Senckenberg Museum of Natural History which has just been finished at Frankfurt on the Main, Germany, and the interior court of the building. In this court as the place of honor in the museum has been installed a skeleton of the great fossil herbivorous reptile,



THE SKELETON OF DIPLODOCUS

Mounted in the covered court of the Senckenberg Museum

Diplodocus, a gift from Mr. Morris K. Jesup. This specimen, which is sixty-one feet long and twelve feet high, was taken from the famous Bone Cabin Quarry, near Medicine Bow, Wyoming, the place from



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PHYSICS SOCIETY

SENCKENBERG NATURAL HISTORY MUSEUM

LIBRARY

THE NEW BUILDINGS OF THE SCIENTIFIC SOCIETIES, FRANKFURT ON THE MAIN, GERMANY

The Diplodocus given to the Museum by Mr. Jesup has been mounted in the court of the central structure. See page 98

which the American Museum has secured its extensive and almost unique series of remains of Diplodocus, Brontosaurus and other gigantic reptiles which flourished in the shallow lakes and marshes that characterized the eastern portion of a part of the Rocky Mountain region in Jurassic time, some eight millions of years ago. This is the first skeleton of its kind to be sent to Europe, and the gift is made in the hope that it may be instrumental in bringing the museums of both continents into closer relationships and that it may foster the kindly feeling now existing between the German and American peoples.

The Senckenberg Museum will be formally dedicated October 13 with elaborate ceremonies under the patronage of the Emperor and Empress of Germany. The American Museum will be represented on the occasion by Director Bumpus.

THE ROBLEY COLLECTIONS OF MAORI HEADS.



HE Department of Ethnology is particularly fortunate in having secured last May the remarkable and practically unique collection of tattooed heads of ancient Maoris which Major General G. Robley of the British Army spent many years in assembling at infinite pains and great expense in New Zealand and from other authentic sources. These heads, thirty five in number, illustrate all the different styles of the art of tattooing as practised among the Maoris prior to the year 1831. At that time the British government forbade further tattooing, because the high value set on the heads by souvenir hunters led to the commission of many murders. A full description of the series of heads and of the outfit of ancient tattooing tools received therewith is reserved for later publication.

MUSEUM NEWS NOTES.

THE great meteorite known as Ahnighito which Commander R. E. Peary, U. S. N., secured in the summer of 1897 on the shores of Cape York in northern Greenland was transferred in August from the position which it has occupied for about two years under the arch at the entrance to the Museum to its permanent abiding place in the Foyer.

The task of moving this $36\frac{1}{2}$ ton mass of iron to its present position with all the resources of the city at command and with plenty of time for the work has made us realize more than ever before the bravery and skill shown by Mr. Peary in bringing the meteorite away from its Arctic home. A thrilling account of Mr. Peary's expedition for the Saviksue or Cape York meteorites may be found in his book "Northward over the great Ice," and a brief notice of the three irons, Ahnighito, the Woman and the Dog, comprising the group may be found in the AMERICAN MUSEUM JOURNAL for January, 1905.

THE Gem Collection has received as a gift from Mr. J. Pierpont Morgan, a boulder of jade (nephrite) from New Zealand weighing 7,196 pounds. This is the largest single mass of this material which is known to be in existence.

THE Department of Mineralogy received in August a valuable gift of Brazilian gems and gem material from Mr. J. F. Freire Murta of Arassuahy, Minas Geraes, Brazil. The series consists of cut gems and unworked fragments illustrating the valued colors of tourmaline and beryl occurring in the state of Minas Geraes.

THE Seventh International Zoölogical Congress, which held its scientific sessions in Boston August 19 to 24, was the guest of the American Museum on Tuesday, August 27. At eleven o'clock the officers of the Museum met the members and delegates of the Congress in the Foyer and conducted them through the exhibition halls, pointing out the particular zoölogical treasures. Among these the collections of the departments of Vertebrate Palaeontology and Invertebrate Zoölogy attracted the most attention. At one o'clock the members of the Congress were the guests of President Jesup at a luncheon which was served in the corner hall opening out of the Laubat Hall of Mexican Archaeology. The afternoon was spent in visiting the laboratories and work rooms of the Museum where the "congressists" were particularly interested in the work being done in glass, wax and other materials in the preparation and mounting of groups and individual specimens. During the evening a reception was given in the building by the Trustees of the Museum and the Council of the New York Academy of Sciences, when the foreign and out-of-town delegates had an opportunity of meeting New Yorkers who are interested in science non-professionally.

An attractive feature of the reception was the series of exhibitions of stereopticon views illustrating recent field work of the Museum and associated institutions in the Fayoum Desert, East Africa, the Bahamas and elsewhere.

THE Department of Mammalogy has recently obtained the skins and complete skeletons of two specimens, a male and a female, of the extremely rare *Solenodon paradoxus* which were collected by Mr. A. H. Verrill in the island of Haiti during the early part of this year. The Solenodont, called the Agouta in Haiti, is a small insect-eating animal, rarely more than twenty inches in total length, with a long naked nose and a long scaly tail and strong claws. Heretofore it has been known in museums by a single skin and skull which are in St. Petersburg, and even the Cuban Solenodont, though more common, is found in but few collections. Another important recent accession in this department is the skeleton and skin of an adult Sea Otter, *Latax lutris nereis*, which was captured in the latter part of last July near Point Lobos, California. The skin is five feet two inches long from tip of nose to tip of tail, but the animal may have been longer than this when alive, since the skin has been stretched sidewise. The Sea Otter ranged formerly from the Bering Sea southward along both coasts of the Pacific Ocean. On the east coast its range extended to northern Lower California, but the animal has become nearly extinct on American shores, and a hunter considers himself well repaid for a year's search by the taking of a single fine specimen.

THE Japanese Room, which attracted much attention in the Japanese government exhibit at the Louisiana Purchase Exposition at St. Louis in 1904, has been recently opened to the public in the Southwest Hall (Hall No. 201) of the second floor of the Museum. The room is richly decorated in silk, carved native woods and lacquer to illustrate the adaptation of oriental materials and patterns to occidental uses. This exhibit has been presented to the Museum by the Nippon Yusen Kaisha through Baron Kaneko of Japan.

MR. FRANK CHAPMAN, Associate Curator of Mammology and Ornithology, accompanied by Mr. J. D. Figgins of the Department and Mr. Bruce Horsfall, the artist, visited the coast of South Carolina in May for the purpose of collecting material for the Egret group. Mr. Chap-

man made another expedition in June and July with the artist Mr. L. A. Fuertes to Saskatchewan for the wild water fowl of the Northwest and to the Canadian Rockies for Ptarmigan. The expeditions were eminently successful in procuring the skins, accessories, photographs and sketches needed for the groups, which form part of the series of Habitat Groups provided for by the North American Ornithology Fund.

MESSRS. WALTER GRANGER and George Olsen of the Department of Vertebrate Palaeontology, returned July 4 from Egypt, where they had spent more than four months in active excavation and exploration in the Fayoum Desert. The objects of the expedition, which was under the immediate direction of Professor Osborn, were set forth in the AMERICAN MUSEUM JOURNAL for last February. The results were highly satisfactory, but a detailed notice of them is reserved for a later number of the JOURNAL, after the material shall have been received at the Museum.

LECTURE ANNOUNCEMENTS.

MEMBERS' COURSE.

THE first course of lectures for the season 1907-1908 to Members of the Museum and persons holding complimentary tickets given them by Members will be held in November and December. The lectures will be delivered on Thursday evenings at 8:15 o'clock and will be fully illustrated by stereopticon views. The programme will be announced this month in a special circular.

PUPILS' COURSE.

THE lectures to Public School children will be resumed in October. These lectures are open to the pupils of the public schools when accompanied by their teachers and to the children of Members of the Museum on the presentation of Membership tickets. Additional particulars of this course may be learned by addressing the Directors of the Museum.

PEOPLE'S COURSE.

Tuesday evenings at 8 o'clock.

A course of lectures illustrated with stereopticon views.

October 1.—DR. P. H. GOLDSMITH, "The Great Mexican Cornucopia."

October 8.—MRS. ALICE D. LE PLONGEON, "The Famous Ruins of Yucatan."

October 15.—PROFESSOR WILLIAM LIBBEY, "Cuba."

October 22.—MR. ORREL A. PARKER, "Porto Rico and Its People."

October 29.—MR. GEORGE DONALDSON, "The West Indies."

Saturday evenings at 8 o'clock.

A course of three lectures by PROFESSOR SAMUEL C. SCHMUCKER illustrated with charts and specimens.

October 5.—"Crabs and Their Cousins."

October 12.—"Insect Changes."

October 19.—"A Family of Spinners (Spiders)."

October 26.—D. EVERETT LYON, Ph. D., "The Life Story of the Honey Bee."

MEETINGS OF SOCIETIES.

Meetings of the New York Academy of Sciences and Affiliated Societies are held at the Museum from October to May, inclusive, as follows:

On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnaean Society, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.

On Friday evenings, as announced:

The New York Microscopical Society.

The programme of meetings of the respective organizations is published in the weekly "Bulletin" of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with the Bulletin as issued.



AHNIGHITO, THE GREAT CAPE YORK METEORITE

The American Museum Journal

VOL. VII

NOVEMBER, 1907

No. 7

AHNIGHITO, THE GREAT CAPE YORK METEORITE.



LAST month mention was made in the JOURNAL of the removal of the Great Cape York (Greenland) Meteorite "Ah-nighito" from the archway in front of the building to its permanent resting place in the Foyer. This month we present as our frontispiece an illustration showing the iron in position. Like the Willamette meteorite on the other side of the entrance, it rests on a solid pedestal of concrete which has been built up through the floor from the rock beneath the cellar. Thus the supports of these heavy masses of iron are entirely independent of the building, and no jarring can cause them to threaten the safety of the structure.

COLLECTIONS FROM THE CONGO.



THROUGH negotiations recently carried on with the Belgian authorities, arrangements have been made to establish in the Museum an extensive exhibition illustrative of the ethnic and zoölogical conditions of the Congo region in Africa. The proposition to establish such a permanent exhibition in New York City has appealed so strongly to King Leopold that he has authorized the government of the Congo Free State to open a special credit to aid in its formation. Two large shipments comprising more than 1500 specimens have already been received.

It is planned to devote two halls of the new wing of the American Museum, now in process of construction, to African ethnology. The Congo section will be beautifully decorated with frescoes showing the scenery and with real examples of the flora and fauna of the country, so that the specimens illustrating human life will appear in surroundings appropriate to the different tribes they represent. Some of the groups

will be reproductions of the magnificent life-like figures in the Tervueren Museum, near Brussels, and all will have the appearance of animation, as they will portray the natives engaged in hunting and in their ordinary peaceful occupations. When the great number and diversity of the tribes in Central Africa, both in the valleys and on the uplands are considered, the scope for picturesque display may be realized.

In addition to the ethnological specimens, M. Liebrechts, secretary general of the Congo Department of the Interior, has promised the most complete data possible in the shape of photographs, statistical documents and samples of exported products, together with the entire series of the scientific publications of the Congo Independent State.

On its part, the American Museum of Natural History will send out expeditions to procure specimens illustrating fully the animal and plant life of this region. It will also collect all available data from independent trustworthy sources, concerning the Congo State, its discovery, history, resources and administration, so that all sides of the question will be presented for the examination of those interested.

The continent of Africa is being so rapidly opened up to occupation by civilized peoples that it is of the highest importance, from the point of view of the ethnologist, that collections be made without delay illustrating the life and the history of the savage and semi-savage tribes now living there. Hence the material recently received from the Congo, together with that which has been promised and that which had been obtained from East Africa and elsewhere will form an extensive and comprehensive collection which will probably, in a comparatively few years, be unique and of inestimable value.

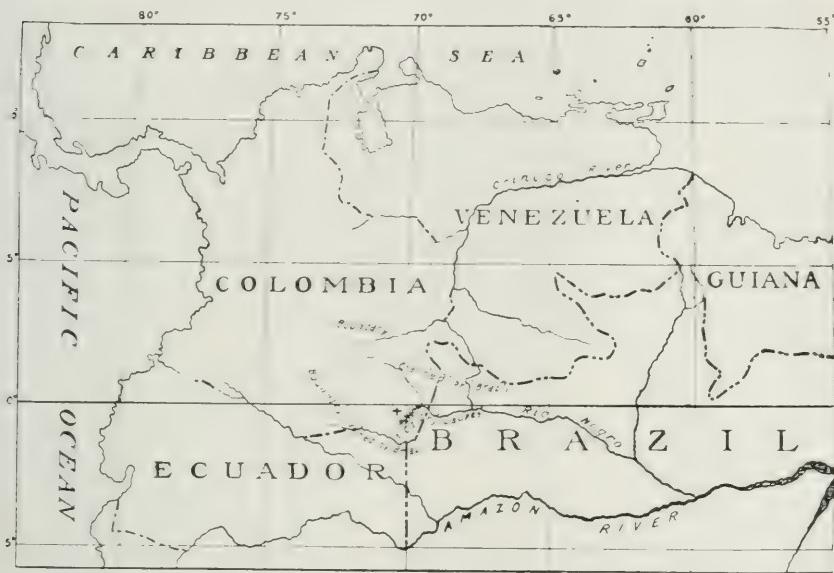
A COLLECTION FROM THE TUKÁNO INDIANS OF SOUTH AMERICA.



THE Museum acquired in September a large amount of ethnological material from the Tukáno Indians of South America, the result of an eight-month sojourn of the well known scientist and collector, Mr. Hermann Schmidt, among the almost unknown people of the Rio Caiary-Uaupeś, a tributary of the Rio Negro in the State of Amazonas, Brazil. The locality is so remote from civilization, and the difficulty and danger incurred in reaching it are so great,

on account of the numerous waterfalls and rapids of the rivers, which are the only highways, that many of the inhabitants had never seen a white man before Mr. Schmidt's arrival, and their mode of life and customs have probably changed but little since the beginning of the historic period in South America.

The primitive condition of the Tukáno Indians gives particular value to this collection of their household utensils, implements of war and the chase, clothing, ceremonial objects and ornaments, since these



SKETCH MAP OF NORTHWESTERN SOUTH AMERICA

The region occupied by the Tukáno Indians is along the Caiary-Uaupes River near the cross (+)

objects throw light on some pages, at least, of the history of the aborigines before the advent of white men.

By far the most striking specimens in the collection are the pieces of feather-work, of which there are about three hundred, consisting of a great variety of head-dresses, waist-bands, ornaments for the legs and arms and plumes to be carried in the hand. These ornaments are never worn except on ceremonial occasions, and then only by the men, the women wearing little clothing and but few ornaments. The feathers used in making these objects are largely from the red and blue macaw, various members of the parrot family, and a species of the heron. In looking at this collection of feather-work one is astonished

at the delicacy and artistic beauty of the different objects and the surprising knowledge of color effects shown in the combinations of the feathers.

Some other notable objects in the collection are spears, shields, bows, arrows, blow-guns with their poisoned arrows, fish traps of basketry and numerous baskets in varied forms. Among musical instruments there are drums, rattles in many forms, pan-pipes and whistles made of deer and jaguar bones. A series of curious specimens illustrates the method of smoking the native tobacco. A cigar from ten to fifteen inches long and about an inch in diameter is made by rolling tobacco in a wrapper of bark and is fastened between the prongs of a wooden cigar-holder. The holder, which is about two feet long, exactly resembles a tuning fork in shape, except that the handle is longer and is sharpened to a point. After lighting the cigar, the Indian sticks the sharp end of the holder into the ground and lies at ease in his hammock, reaching out from time to time to draw in a whiff of smoke from the big cigar.

C. W. MEAD.

THE PRONGHORN, OR AMERICAN ANTELOPE.

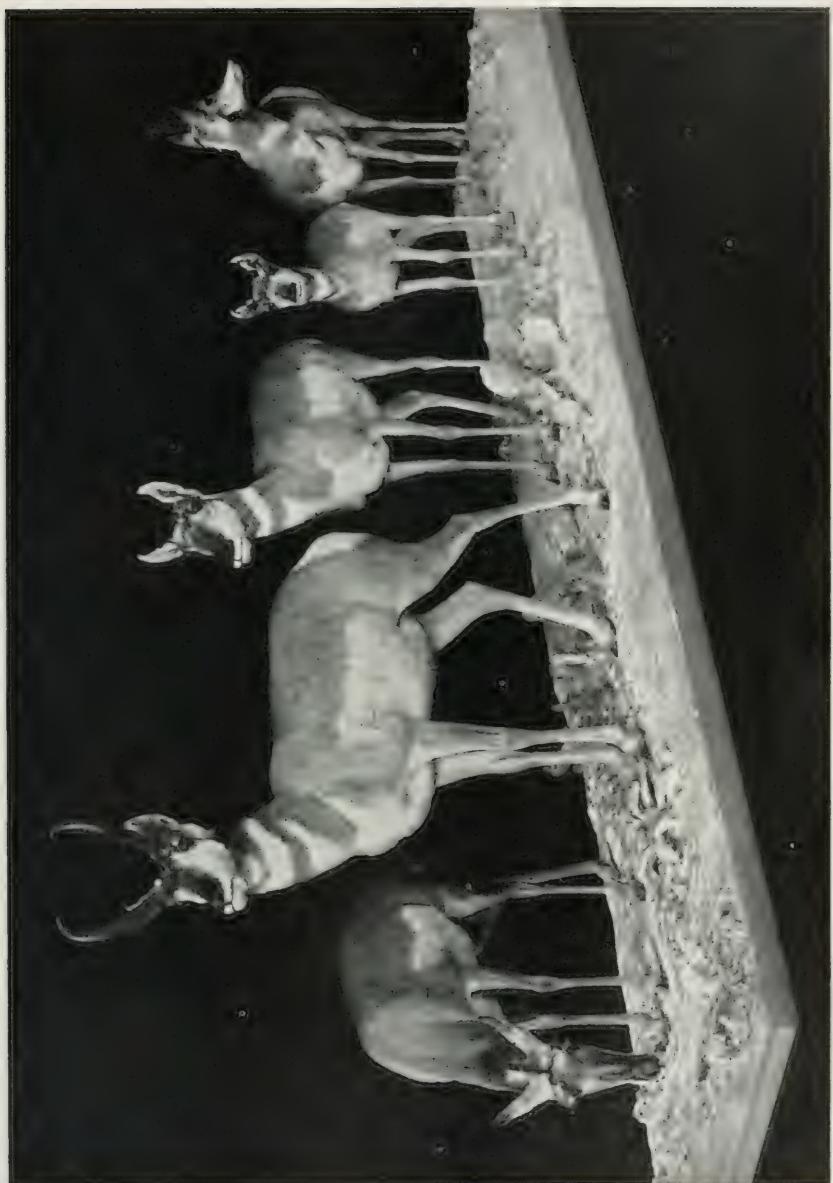


THE Pronghorn (*Antilocapra americana* Ord) belongs to a family of its own, combining features of the deer tribe with those of the goat and antelope, and is one of the most beautiful and interesting of our large game animals. It lives on the open rolling plains of the

Western States, where at one time it was to be found in bands of hundreds or even thousands. No animal on the American continent compares with the Pronghorn in speed and keenness of vision, but, although very wary, the innate curiosity of the beast often leads to its destruction. A waving handkerchief or anything which excites its interest will frequently draw it within rifle-shot, and, like the buffalo, it has been reduced in numbers until only a few scattered herds remain.

A peculiar feature of the Pronghorn is its two white rump-patches which may be raised or lowered at will and are used as signals, for on a bright day the disc gives flashes of light which can be seen at a long distance. This odd habit, called "flashing," is illustrated in the photographs and by the young male in the group. Unlike other hooved animals, the horns of the antelope are placed directly above the eye, and

PRONGHORN, OR AMERICAN ANTELOPE
Group in East Mammal Hall, No. 207 of second floor



have a bony core from which the outer covering is shed annually. The core itself always remains in place.

THE NEW HALL OF RECENT FISHES.



HALL devoted to the exhibition of Fishes has just been opened to the public on the second floor of the Museum, at the extreme end of the north wing. The collection consists of a fine series of mounted skins, casts and skeletons, supplemented by colored plates of various typical and striking forms. It is intended (1) to give a synoptic view of the Fishes of the world based on anatomical characteristics; (2) to emphasize, by means of descriptive labels, the food-fishes and others having commercial value or striking peculiarities; (3) to bring into relief certain general features of biological significance, like variation, apparent degeneration, protective mimicry, brilliant coloration of tropical forms, and adaptation to such special conditions as food-supply and deep-sea life.

A large study-collection of alcoholic specimens supplements the exhibition series. This material is in one of the Museum laboratories, where it is available for research work by students.

THE FOREL COLLECTION OF ANTS.

PROFESSOR AUGUSTE FOREL of Yvorne, Switzerland, has just contributed an important addition to the large collection of Formicidæ already in the Museum by donating a series of some 3,500 specimens, representing about 1,400 species of exotic ants. In this collection there are nearly 800 type specimens, which are, of course, invaluable to future students. The Museum collection is now so extensive and contains so many of the 5,000 known species, subspecies and varieties of these highly variable insects that the study of additional materials from any part of the world can be undertaken here profitably and without expending time in going over the much scattered and often very inadequate descriptions of some of the earlier myrmecological writers.



PRECIOUS OPA

G

George S.

The specimen, which is twice the size of the illustr
and one half inches wide, was found as a bow



QUARTZITE

John, Esq.

or eighteen and three quarters inches long by six
feet White Cliffs, New South Wales, Australia.

THE CIRCULATING NATURE STUDY COLLECTIONS.



URING the school year 1906-1907 the circulating Nature Study Collections were used by 660,740 pupils in the city public day schools and 79,358 pupils in the vacation schools. The demand for the sets has increased so that the Museum last summer procured an automobile to facilitate delivery to the schools. The specimens in the collections have been selected with a view to supplying material required in the Syllabus of Nature Study issued by the Board of Education, and there are now thirteen of these collections, containing in all five hundred sets. The collections and the number of pupils in the ordinary schools using them are shown in the following list:

COLLECTIONS.	No. OF PUPILS.
<i>Native Birds. Adapted for Grades 1A-4B:</i>	
Owl Set — Containing owl, chickadee, nuthatch, song sparrow, kinglet	89,565
Blue Jay Set — Containing blue jay, woodpecker, cross-bill, junco, English sparrow	85,882
Robin Set — Containing robin, red-winged blackbird, oriole, meadow-lark, chipping-sparrow	76,813
Bluebird Set — Containing bluebird, phœbe, barn swallow, house wren, chimney swift	66,394
Tanager Set — Containing scarlet tanager, red-eyed vireo, goldfinch, humming-bird and pigeon	64,957
<i>Insects. Adapted for Grades 2A-5A:</i>	
Containing cynthia and cecropia moths, monarch butterfly, etc., and typical representatives of the different groups of insects	41,327
<i>Special Insects. Adapted for Grades 2A-5A:</i>	
Containing life-history of cecropia moth, development of monarch butterfly, life and work of honey-bee and household insects	81,285
<i>Mollusks. Adapted for Grades 4A and 5A:</i>	
Containing shells of about twenty-five mollusks, including the oyster, clam and chambered nautilus	26,325
<i>Crabs. Adapted for Grade 5A:</i>	
Containing relatives of the common blue crab	1,830

COLLECTIONS.

	NO OF PUPILS.
<i>Starfishes and Worms. Adapted for Grades 4A and 5A:</i> Containing typical species of the two groups	24,848
<i>Sponges and Corals. Adapted for Grades 4A and 5A:</i> Containing examples of about fifteen species	14,501
<i>Minerals and Rocks. Adapted for Grades 3B and 4A:</i> Containing twenty specimens of minerals and building stones	48,816
<i>Native Woods. Adapted for Grades 2A and 5B:</i> Containing elm, hickory, maple, white birch, ailanthus, sweet-gum, sour-gum, chestnut, sycamore. Specimens show cross, longitudinal and oblique sections of the wood, characteristic bark, annual ring, etc.	38,197
<i>Total number of day-school pupils</i>	<i>660,740</i>

The number of schools using the collections from September, 1906, to June, 1907, was 273, distributed among the boroughs as follows:

Manhattan, 125	Bronx, 24
Brooklyn, 73	Queens, 11
Richmond, 13	Corporate Schools, 27

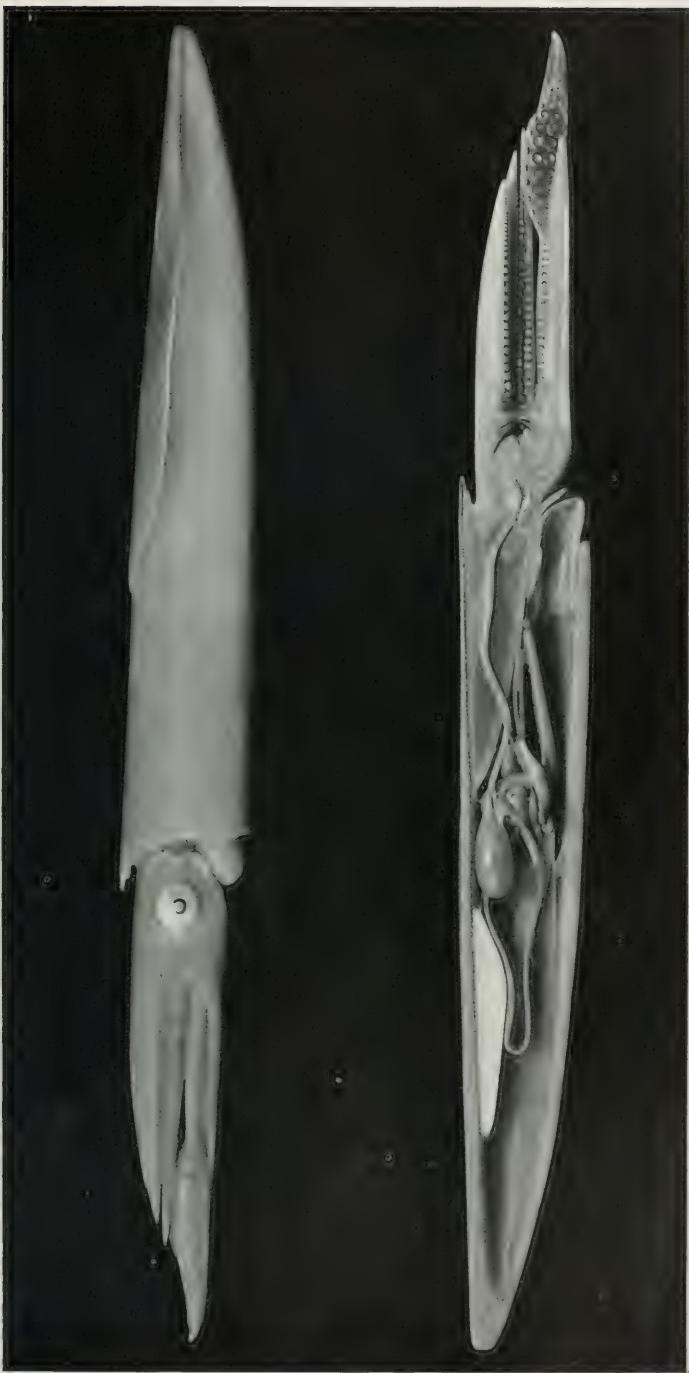
The increase in the use of the collections by the pupils of the vacation schools has been marked and gratifying. Twenty-seven centers used the collections during July and August, 1907.

The work of the Museum in furnishing these collections to the public schools has attracted wide attention not only in this country but also in Europe, and several cities, particularly Newark, Milwaukee and St. Louis, have taken steps to introduce similar collections into their schools.

THE MODEL OF THE ATLANTIC SQUID.



HE Department of Invertebrate Zoölogy has recently placed on exhibition, in the Synoptic Hall, No. 107 of the ground floor, an enlarged model of the Common Squid (*Loligo pealii*), a marine invertebrate common off the Atlantic Coast especially about Woods Hole, Massachusetts, where it is very destructive to the herring fisheries. The model, an illustration of which is given on page



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MODEL OF THE COMMON ATLANTIC SQUID
Two views showing external features and internal anatomy. Synoptic Hall, No. 107 of the ground floor
The illustration is about one fifth as long as the model

115, was prepared in the Museum under the direction of Dr. L. W. Williams, and represents the male cut so as to show the peculiar internal anatomy of the animal. It is about twice (linear) natural size.

The Squid belongs to the Decapods, a subdivision of the Mollusks, and is closely related to the Octopus. The species represented by the model averages more than a foot in length and is somewhat cigar-shaped. It has a distinct head, furnished with a single pair of eyes which are the most perfect found among invertebrates and closely resemble the vertebrate eye itself, though originating in the embryo in a quite different way. The head is provided with a parrot-like beak, especially adapted for tearing flesh. The beak is set in a circular mouth surrounded by ten flexible arms, or tentacles, eight of which are of equal length and studded with suckers for grasping the animal's prey. The remaining two tentacles are much longer than the others and are without suckers, except on the club-shaped ends. The surface of the body is entirely covered with clusters of reddish pigmented spots known as chromatophores. These are ordinarily pale pink, but when the animal is excited, they become a deep red.

Most animals of this group are provided with an "ink-sac" which, in the case of the Cuttlefish (*Sepia officinalis*), secretes an intensely black fluid, the sepia of commerce. When the squid is startled, the "ink" is forcibly ejected from the body through a duct opening into the anus. The ink mixes with the surrounding water to form a black cloud, under cover of which the animal escapes.

The mode of progression of the Octopus and Squid is unique in the animal kingdom. The body proper is inclosed on the lower side in a "mantle cavity" to which water is freely admitted. At the entrance to this cavity is a flexible funnel or siphon with the small end pointing outward and forward. By filling the mantle-cavity with water and forcibly ejecting it through this funnel the animal is shot backward like a skyrocket and at remarkable speed. When going forward, the mouth of the funnel is bent so as to shoot the stream of water backward.

MUSEUM NEWS NOTES.

THE permanent endowment fund of the Museum has recently been increased by a gift of \$10,000 from Mrs. J. B. Trevor, and by the payment of a bequest of \$25,000 from the estate of William P. Davis, Esq.

THE Department of Invertebrate Palaeontology has recently placed on exhibition several interesting series of fossils. Among these may be mentioned about fifty specimens of Crinoids, or "sea lilies," from the famous beds of Lower Carboniferous age at Crawfordsville, Indiana. These are part of a particularly fine set that was received with the Cope Collection, presented to the Museum by President Jesup. Another noteworthy collection is the series of Unios from Hell Creek, Montana, presented to the Museum by Mr. Barnum Brown. These Unios are of latest Cretaceous time, that is to say they are millions of years old, but they are so much like the "fresh water clams" which inhabit the rivers and lakes of the Mississippi basin at the present time that the region in which they occur is undoubtedly the original home of our living forms. The present Unios are the shells from which are obtained the fresh water pearls of commerce. A little series of fossils from Grantland, $82^{\circ} 37'$ north latitude, was brought back by the Peary Expedition in 1906. The fossils are of Carboniferous age and prove the existence of a mild climate in these far northern regions in Palæozoic time.

DR. D. LE SOUËF, Director of the Zoölogical Gardens, Melbourne, Australia, and delegate of the Colonial Government to the Seventh International Zoölogical Congress, gave an illustrated lecture at the Museum on Monday evening, September 9, under the auspices of the New York Academy of Sciences. His subject was "The Wild Animal Life of Australia," and he presented a series of remarkable and interesting photographs illustrating the strange animals of Australia and their home surroundings. Dr. Le Souëf's collection of such photographs was made by himself and is a result of wide experience in the field. It is considered the most complete in existence.

PROFESSOR MARSHALL H. SAVILLE, Honorary Curator of Archæology, arrived in New York September 10 on his return from Ecuador, where he had devoted about three months to field work in the coast region. He had most excellent success in collecting, and obtained a large quantity of material illustrating the Pre-Columbian life of the region, a region which is practically unknown to the scientific public. Mr. George H. Pepper of the Department of Ethnology, who accompanied Professor Saville, remained in Ecuador for additional work and returned to New York October 2.

PROFESSOR HENRY E. CRAMPTON of Columbia University made a second expedition to the Island of Tahiti during the past summer in behalf of the Museum, carrying on the studies which he began last year with regard to the effect of geographical isolation as a factor in specific evolution and the determination of data relating to the inheritance of sundry specific characters.

DURING a trip to Germany last summer Professor Bashford Dean, Curator of Fossil Fishes, secured for the Museum five beautiful specimens of fossil fishes from the celebrated lithographic stone quarries at Solnhofen, Bavaria. Among these are a *Propterus*, a *Caturus* and a *Megalurus* that are hardly excelled by any similar specimens in the German museums.

H. W. SETON-KARR, Esq., of Wimbledon, England, has presented to the Department of Archaeology a splendid series consisting of seventy-one specimens of palaeolithic implements collected by him in the Districts of Poondi and Cazeepet, Madras Presidency, India. These implements are of red argillaceous sandstone and were washed out of Pleistocene alluvial deposits containing quartzite boulders. These relics of the early Stone Age have been placed on exhibition in the gallery cases of the Peruvian Hall, No. 302 of the gallery floor.

A LARGE ethnological collection made in Korea in 1906 and 1907 by Dr. C. C. Vinton has been presented to the Museum. The material consists principally of vessels of glazed and unglazed pottery, many of which are of beautiful design and finish.

THE collection illustrating the culture of the Indians of the Plains has been enriched by the accession of two decorated buffalo robes from the Sioux tribe. Since the practical extermination of the buffalo twenty-five years ago such robes have become extremely scarce.

THE Department of Archaeology has received from Mr. Alanson Skinner a series of specimens collected for the Museum this year in Ontario, Livingston and Erie Counties, New York, from sites formerly occupied by the Seneca and Neutral Indians of Iriquoian stock.

LECTURE ANNOUNCEMENTS.

MEMBERS' COURSE.

The first course of illustrated lectures for the season 1907-1908 to Members of the American Museum of Natural History and their friends will be given according to the following programme:

Thursdays at 8:15 P. M.

- November 7.—FRANK M. CHAPMAN, "Bird Studies in the Bahamas, South Atlantic States and Northwestern Canada."
- November 14.—HENRY FAIRFIELD OSBORN, "The American Museum Expedition to the Fayoum."
- November 21.—EDMUND OTIS HOVEY, "A Month's Tour of the Yellowstone Park."
- December 5.—HARLAN I. SMITH, "An Unknown Field in American Archaeology."
- December 12.—F. A. LUCAS, "The Fur Seal; its History and Habits."

PUPILS' COURSE.

Open to School Children, when accompanied by their Teachers, and to Children of Members, on presentation of Membership Ticket.

Lectures begin at 4:00 P. M.

	Oct.	Nov.	
Monday,	28	18.—	"Among the Filipinos." By G. H. Sherwood.
Wednesday,	30	20.—	"The Panama Canal." By E. O. Hovey.
Friday,	1	Nov.	22.—"Our Native Birds and Their Habits." By F. M. Chapman.
Monday,	4		25.—"Early Days in New York City." By R. W. Miner.
Wednesday,	6	Dec.	4.—"Forests and their Dependent Industries." By A. C. Burrill.
Friday,	8		6.—"Historic Scenes in New England." By G. H. Sherwood.
Monday,	11		9.—"Peoples of the Earth." By H. I. Smith.
Wednesday,	13		11.—"Scenes in Our Western States." By R. C. Andrews.
Friday,	15		13.—"Famous Rivers of the World." By R. W. Miner.

LEGAL HOLIDAY COURSE.

Open free to the public. No tickets required.

Thanksgiving Day, November 28, 3:15 P. M. EDMUND OTIS HOVEY,
"The Yellowstone National Park."

PEOPLE'S COURSE.

Given in coöperation with the City Department of Education.

Tuesday evenings at 8 o'clock. Doors open at 7:30.

A course of lectures illustrated with stereopticon views.

November 5.—PROFESSOR CHARLES L. BRISTOL, "The Bermudas."

November 12.—EDWIN E. SLOSSON, PH. D., "The Panama Canal."

November 19.—PROFESSOR HENRY H. RUSBY, "The Delta of the Orinoco."

November 26.—MISS CAROLINA H. HIDOBRO, "Typical Life in Chili."

Saturday evenings at 8 o'clock. Doors open at 7:30.

A course of three lectures by PROFESSOR SAMUEL C. SCHMUCKER.

November 2.—"Little Brothers of the Air (Birds)."

November 9.—"Modern Mound Builders (Ants)."

November 16.—"My Foster Children (Animals as Pets)."

November 23.—J. RUSSELL SMITH, PH. D., "The Story of a Steel Rail."

The first of a course of four lectures on "Commercial Geography" illustrated by stereopticon views.

November 30.—"The Story of a Ton of Coal."

Children are not admitted to these lectures, except on presentation of a Museum Member's Card.

MEETINGS OF SOCIETIES.

Meetings of the New York Academy of Sciences and its Affiliated Societies will be held at the Museum during the current month as follows:

On Mondays at 8:15 P. M. The New York Academy of Sciences:

November 4.—Business meeting and Section of Geology and Mineralogy.

November 11.—Section of Biology.

November 18.—Section of Astronomy, Physics and Chemistry.

November 25.—Section of Anthropology and Psychology.

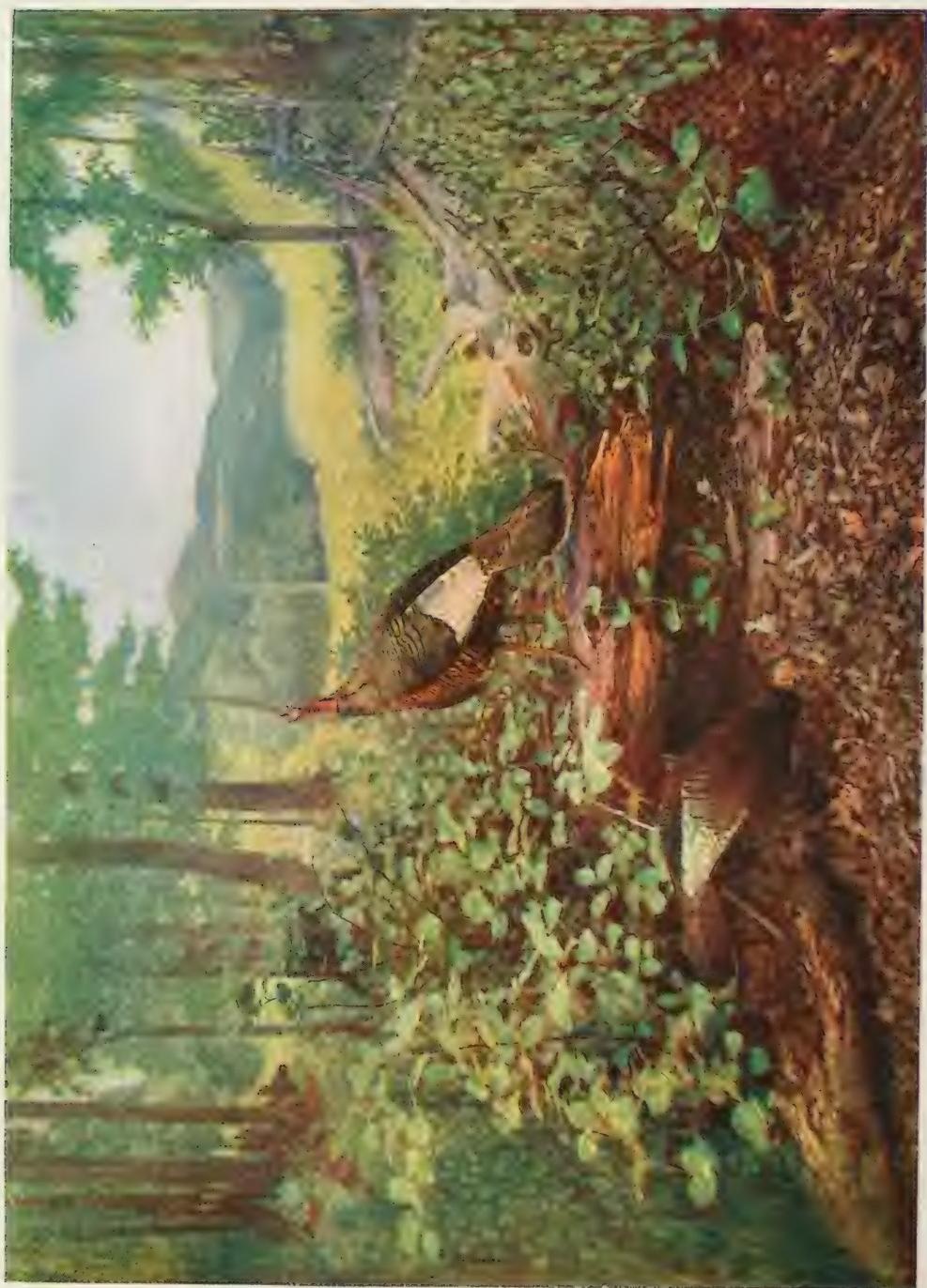
On Tuesday evenings as announced:

The Linnaean Society, The New York Entomological Society and The Torrey Botanical Club.

On Friday evenings as announced:

The New York Microscopical Society.

Full programmes of the meetings of the several organizations are published in the weekly *Bulletin* of the Academy and sent to the members of the societies. On making request of the Director of the Museum, our Members will be provided with this *Bulletin* as issued. The meetings are public.



WILD TURKEYS IN THE MOUNTAINS OF WEST VIRGINIA

Vernon L. Jones, American Ornithology Fund

A color reproduction photograph of the painting in the American Museum of Natural History

The American Museum Journal

VOL. VII

DECEMBER, 1907

No. 8

A REPORT ON EXPEDITIONS MADE IN 1907 UNDER THE "NORTH AMERICAN ORNITHOLOGY FUND."



THROUGH the continued generous coöperation of the subscribers to the "North American Ornithology Fund," further important additions have been made to our series of "Habitat Groups" of North American birds.

The collections and field studies on which these groups are based can be made only during the nesting season. The work for this year was therefore planned to cover as long a nesting period as possible, beginning with southern species which nest as early as January and ending with northern birds which are not concerned with domestic affairs until July. In brief, the schedule was as follows:

March.—Southeastern Bahamas for Man-o'-war Birds and Boobies.

April.—Southern border of the Florida Everglades for Spoonbills and Ibises.

May.—South Carolina for White Egrets.

June.—Plains of Saskatchewan for Wild Geese and Grebes.

July.—Summits of the Canadian Rockies for Ptarmigan and other Arctic-Alpine Birds.

The species of birds here included show wide variation in form and in nesting habits, while the country in which they live — their "habitat" — presents an even greater diversity, as we pass from a coral islet to a mangrove swamp or a cypress forest and over the rolling plains to the snow-clad mountain crests. The subjects selected were thus designed to add to the zoölogical as well as geographical instructiveness of the exhibits as a whole.

A series of mishaps so prolonged the Bahaman expedition that I was prevented from reaching the Everglades in time to find Spoonbills nesting, but, with this exception, the schedule outlined above was followed with eminently satisfactory results.

On March 28, with Dr. Alfred G. Mayer and Mr. George Shiras, 3d, I sailed from Miami, Florida, for Nassau, Bahamas, aboard the 58-foot auxiliary ketch, "Physalia," belonging to the Marine Biological

Laboratory of the Carnegie Institution. Dr. Mayer, who is the Director of the laboratory, was in command, and to his coöperation the Museum is indebted for the success which attended our efforts to secure material and studies for the groups of Man-o'-war Birds and Boobies; indeed, had it not been for Dr. Mayer's skilful seamanship, it is probable that the expedition would not have returned at all.

Nassau was reached March 29 at midnight. Laboratory supplies were landed for the use of members of the staff who proposed to remain



CAMP ON CAY VERDE

here to study, and, permission to collect the birds needed having been promptly granted by the Bahaman Government, we set sail for Cay Verde, March 31 at 7 A. M.

Cay Verde is an uninhabited islet some forty acres in area situated on the eastern edge of the Columbus Bank, between the Ragged Islands and Inaugua. It is only 250 miles from Nassau, but adverse weather conditions, which at times threatened us with serious disaster, lengthened our voyage thither to ten days. The absence of definite information, both as to the number of birds frequenting Cay Verde and the time of



THE WILD-TURKEY HABITAT GROUP
In process of construction

their nesting, made the outcome of our trip more or less uncertain, and the difficulties encountered in reaching this remote islet added in no small degree to the pleasure with which we found it thickly populated with Boobies and Man-o'-war Birds whose nesting season was at its height. There is no harbor at Cay Verde, and, fearing that we might be forced by a storm to sail before our work was finished, Mr. Shiras and I camped on the islet, while Dr. Mayer anchored off shore, changing his position from one side of the Cay to the other as the wind shifted.

We estimated that there were about 3000 Boobies and 500 Man-o'-war Birds on Cay Verde. The Boobies nested on the ground, the Man-o'-war Birds in the dense thickets of sea grape and cactus. Some nests contained fresh eggs, but the larger number held young birds in various stages of development, while a few young were already on the wing. The existing conditions therefore presented an epitome of the whole nesting season.

The Boobies were remarkably tame, and our intrusion occasioned surprise and resentment rather than fear. One could walk among them as one would through a poultry yard, examining the nests and their occupants without attempt at concealment. The Man-o'-war Birds were more suspicious but still were approached without difficulty. Under these circumstances photographs and specimens were easily secured, and in the course of three days satisfactory material was collected for the proposed group. A much longer period would be required to make adequate studies of the life of this bird community. Cay Verde was left April 11, and, after encountering the usual unfavorable conditions and some mishaps, we arrived at Miami, Florida, April 29.

It being now too late to do the work planned for southern Florida, I proceeded to South Carolina, being joined by Mr. J. D. Figgins of the Museum's Department of Preparation and by Mr. Bruce Horsfall, the artist who has so successfully painted many of the backgrounds of the groups already completed.

It has long been our desire to include the White Egret in the series of "Habitat Groups," but plume hunters have brought this bird so near the verge of extermination that our efforts to find a "rookery" in which suitable studies might be made were fruitless before the present year. In February, 1907, information was received of the existence of a colony of Egrets on a large game preserve in South Carolina, and the owners of the preserve readily granted the Museum permission to make the

necessary studies and collections. On the arrival of our expedition every facility for our work in the way of transportation, guides and other necessaries was accorded us.

When the ground in which the rookery is situated was acquired by the



CYPRESSES IN WHICH THE EGRETS NEST

The blind from which the birds were studied may be seen in the upper right-hand corner of the picture

club now owning it, plume hunters had nearly exterminated the aigrette-bearing Herons which formerly inhabited it in large numbers. A few had escaped, and after seven years of protection they have formed one



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THE BROWN PELICAN HABITAT GROUP
Hall No. 308, Gallery Floor

of the largest colonies of this much-persecuted bird now existing in the United States. Six other species of Herons were found nesting with the White Egrets, the whole forming a rookery like those which existed commonly in the days of Audubon, but which are now almost unknown in the United States.

A former "plumer," now chief warden in charge of the preserve, stated that both the Little White or Snowy Egret and the Roseate Spoonbill were once found in the region, but their complete annihilation left no stock which, under protection, might prove the source of an ever-



AN EGRET FAMILY

increasing progeny. It is doubtful if these birds could be introduced, but in any event the preservation of the White Egret alone is a sufficient cause for thanksgiving, and bird lovers will learn with gratification of the existence of an asylum where this beautiful creature will long be assured of a haven of refuge.

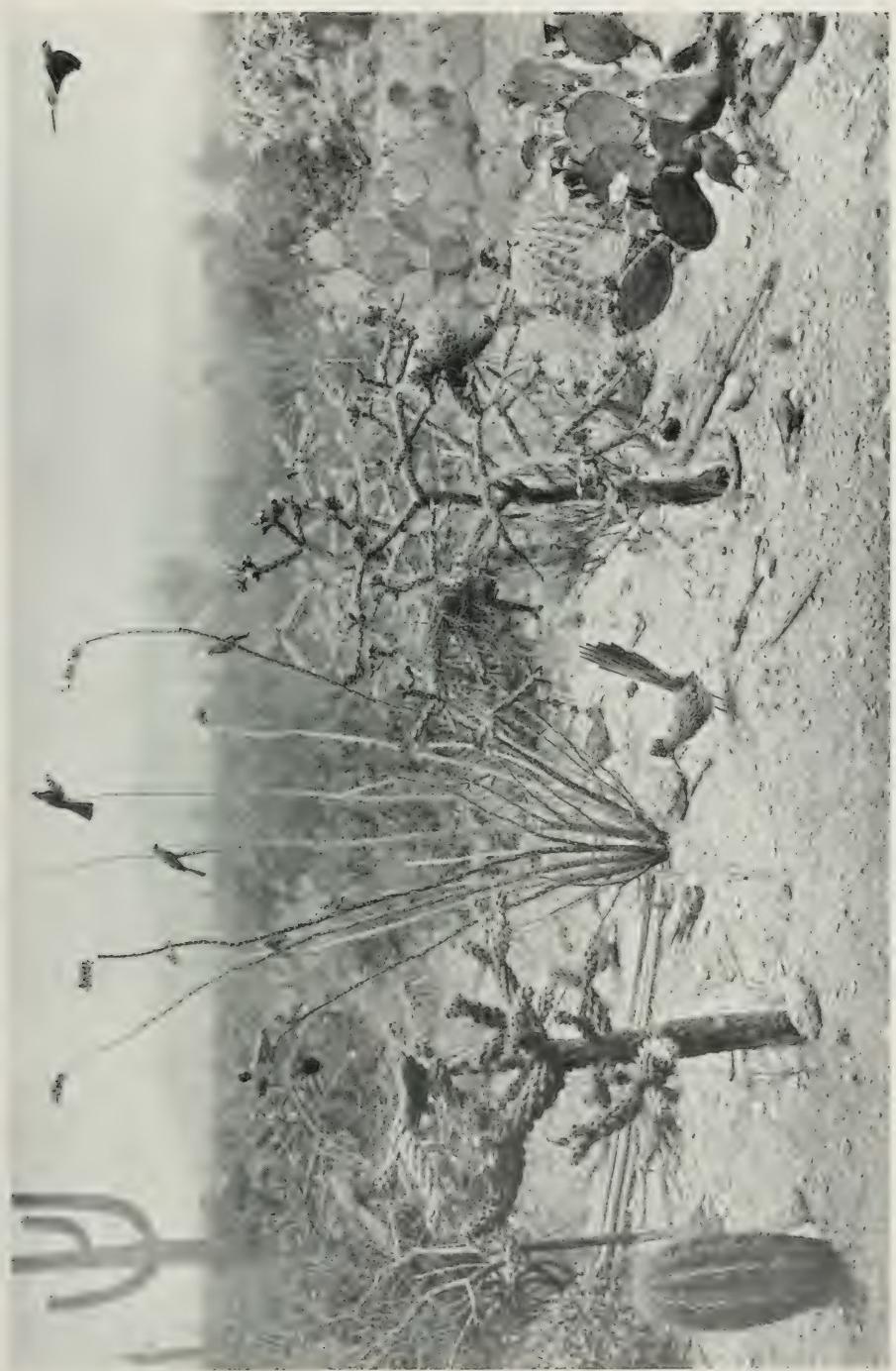
The Egrets were nesting high in the cypress trees which grow in a lake several miles in length. In order, therefore, to make the photographic studies so essential to the taxidermist in securing life-like poses for his subjects, as well as to learn something also, of the Egrets' little-

known home life, the artificial umbrella-blind employed on many previous occasions for similar purposes was placed fifty feet up in a cypress tree and draped with "Spanish moss" (*Tillandsia*). From it photographs of the birds nesting in neighboring trees were eventually made. The surroundings were of great beauty, and Mr. Horsfall's carefully made studies will enable him to reproduce in his background the singular charm of a flooded cypress forest.



RING-BILLED AND CALIFORNIA GULLS

On June 5, accompanied by Mr. L. A. Fuertes, as artist, I left New York for Maple Creek, Saskatchewan, on the line of the Canadian Pacific railway. This is a region of rolling plains dotted with lakes and ponds which, when the water is not too alkaline, support, in their shallower parts, a dense growth of rushes, the home of Grebes, Coots, Bitterns, Franklin's Gulls and Ruddy, Red-headed and Canvasback Ducks. About the grassy borders of the lakes and sloughs, Mallards, Gadwalls, Pintails, Widgeon, Blue-winged Teal and other ducks nest. These



HABITAT GROUP SHOWING CACTUS-DESERT BIRD LIFE OF ARIZONA
Hall No. 308, Gallery Floor

species were also found on islands in the lakes, where alone the Wild Goose was known to nest, while some small islets were virtually covered by hosts of Gulls and Pelicans.

On the prairies Long-billed Curlew, Marbled Godwits, and Bartramian Sandpipers or "Upland Plover" as sportsmen know them, lay their eggs. The region has well been called the nursery of wild-fowl, as at one time were our border states to the south; but the advance of civilization, which first transforms a buffalo range into a cattle country and



CAMP AT PTARMIGAN PASS

later into a wheat ranch, has already reached the early stages of its agricultural development about Maple Creek and the forced retreat of the wild fowl to the more remote north is only a question of time. The Canadian Government would do well to set aside some of its still unsettled lands as permanent breeding reservations to which year after year the water-fowl could return to nest. Such reservations would be nurseries and, by permitting a bird to reproduce, would be of infinitely more importance than preserves which afford protection only during the winter.

Near Maple Creek materials were secured for groups of Wild Geese, Western and Eared Grebes, the Long-billed Curlew and Bartramian Sandpiper, due permission having first been received from the Chief Game Guardian of the Province. The lack of timber and of drinking water made this region poor camping ground and while hunting and collecting we were given quarters with Mr. Andrew Scott on Crane Lake and with the Messrs. Baynton on Big Stick Lake. To these gentlemen



A PTARMIGAN ON HER NEST

Mr. Fuertes about to stroke the bird

we are indebted not alone for entertainment but also for much practical assistance.

July 2 we resumed our western journey, in search now of those Arctic birds which on the alpine summits of the Rocky Mountains find congenial surroundings. After inquiry at various places, we decided to camp near the Ptarmigan Lakes, where we were informed the birds we wanted could be found. Saddle and pack horses and a guide were

secured at Laggan, and on July 8 we encamped just below the entrance to Ptarmigan Pass near timberline, which here is at an altitude of 7500 feet above the sea.

The alpine spring was at its height. The wet meadows, from which the snow had but lately disappeared, were yellow with butter-cups, the borders of the rapidly shrinking snow banks were starred with large white alpine anemones, on the drier slopes heather bloomed luxuriantly, and the rocks were covered with flowering Dryas. The lakes were still ice-bound; the mercury reached the freezing point nightly, and we experienced several storms of snow and sleet.

Our work in this indescribably picturesque region was unexpectedly successful, specimens of birds and plants and a large number of photographs being obtained. Furthermore, the view from the heather-grown home of the Ptarmigan, which will form the actual foreground of our group, southward through the Ptarmigan Pass was of exceptional grandeur, even in this land of sublime scenery. The successively fainter timber-clad shoulders of the gap leading to the Bow Valley are backed by Mt. Temple towering impressively, the central peak on horizon marked to the east by the spire-like summits of the mountains about Moraine Lake and to the west by Mts. Hungabee, Lefroy and Victoria.

The tourists who climb these mountains or penetrate the valleys lying between them may obtain a far more striking view of the range by crossing the Bow River at Laggan and ascending the mountains to the north in which the studies for our Ptarmigan group were made.

FRANK M. CHAPMAN.

THERE has recently been installed in the Hall of Invertebrates, on the ground floor of the Museum, an interesting series of models showing the larval, pupal and adult stages in the life history of the mosquito which has been proven to cause the spread of malaria. The models are 75 times as great in linear dimensions as is the insect itself, and therefore the volume is more than 420,000 times that of the living animal. On this scale, the adult mosquito stands one and one half feet in height and is three feet long. The spread of the wings is three feet and the mouth parts (beak) are one foot long. All the details of the anatomical structure of the animal have been reproduced with scientific accuracy and painstaking labor. A guide leaflet upon this model and the life history of the malaria mosquito is in course of preparation.

AN ALEUTIAN BASKET.



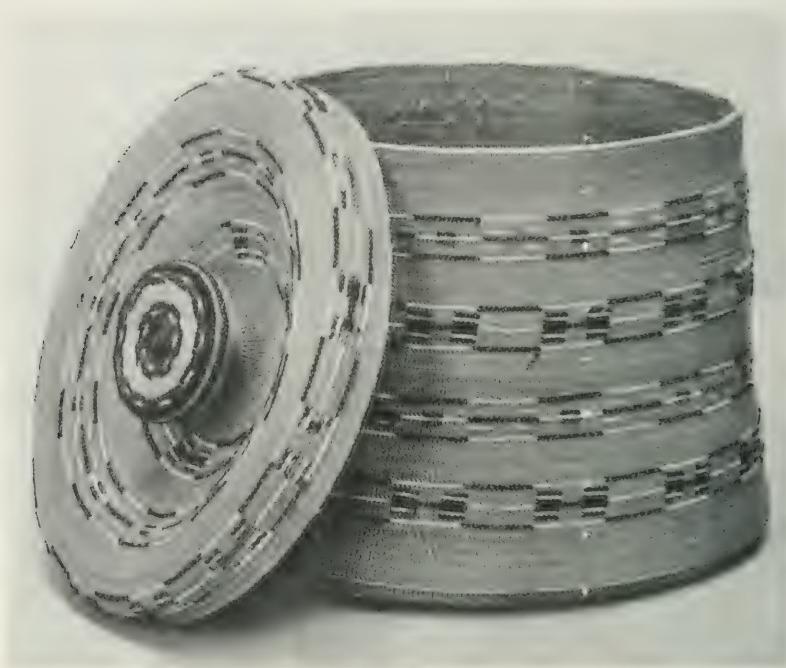
THROUGH Mrs. Mary Graham Young the American Museum has recently received from the Women's National Relief Association, or Blue Anchor Society, a small Aleutian basket which is unique in its way.

The Aleuts, the Indians dwelling on the Aleutian Islands, are considered a division of the Eskimo. Though now far advanced toward civilization, they still retain their native skill in the textile art. Their basketry first came to notice through specimens brought from the inhabitants of Attu Island, hence all baskets of this type usually pass under the name Attu. Taking the recent gift as a representative basket, it may be interesting to know something of its making.

The gathering and preparing of the material used in the weaving is an annual task of no small importance. Early in July a great harvesting party of women starts out to get the wild rye, called "beach grass," which is the only suitable basket material to be found on the islands. This is a coarse grass, with leaves about two feet long and half an inch wide, growing plentifully along the coast and on the hills. It is to the high land, however, that the women go to find the best material. Only two or three of the young and delicate leaves are selected from each stalk, hence this is no easy and rapid gathering, and it is with the greatest patience that the native women reap their harvest.

The drying or curing process is a long one. First the beach grass is spread out in rows on the ground in a shady place. As it dries, it is turned frequently. This stage of the drying takes about two weeks. Then the grass is sorted as to size and taken into the house, the coarser leaves split with the thumb-nail into three parts, the middle or midrib being discarded, and the fine leaves left unsplit, because still too tender for such treatment. Bundles are now made of all the material, and for a month on cloudy days these are hung out on a line. The final drying is done indoors and then the grass is separated into small wisps about the size of a finger, with the ends braided loosely so that the grass may not tangle when a thread is pulled from the wisp. This single thread may be split by the thumb nail to any size desired at the time it is used.

A great part of the weaving is done during the winter months and indoors. The underground huts of the Aleuts are made of driftwood, wreckage, or timber deposited by ships, covered over with sod. These grass-covered mounds, which are about six feet high, have a little door at one end and a small glazed window at the other, and it is marvelous



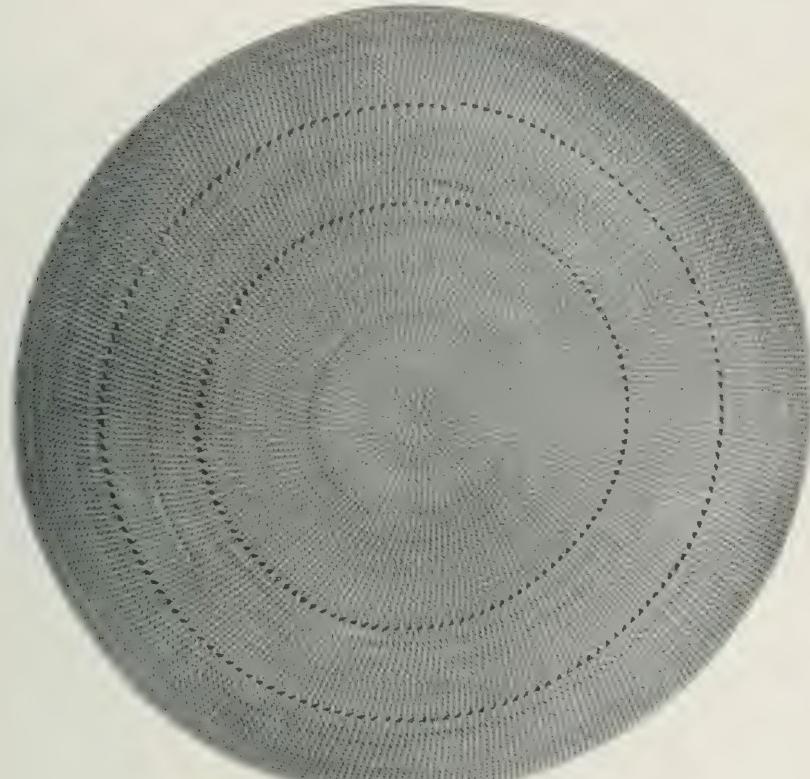
ALEUTIAN BASKET

that such fine and beautiful baskets can be made in such places, and with such light, the specimen here illustrated having from twenty-five to thirty stitches to the inch. John Smith's Indians used to suspend their baskets from the limb of a tree during the weaving, but these people hang theirs from a pole after the bottom has been completed or support them on sticks thrust into the ground, weaving the sides downward, that is with the basket upside down.

The Aleuts make several weaves. This basket is of plain twine-weave with two exquisitely wrought rows of hemstitching on the bottom, while the sides are decorated with four borders of false embroidery.

The encircling bands, composed of lines and rectangles are in red, green and blue worsted and silk thread and white skin from the throat of a fish of the sculpin family cut into fine threads.

On the lid are three more bands, with an attractive medallion^r in



ALEUTIAN BASKET. THE BOTTOM

colors on the knob or handle. The technique of the false embroidery is interesting, as the patterns are woven into the texture, but not through to the inside of the basket. At each stitch where the design is desired as the two weavers which form the weft inclose the warp spoke, the outer weaver is wrapped by the colored thread. Within the knob on the cover are several pebbles that rattle when shaken. The sound is considered to resemble the rattling of stones on a beach as they are moved by the waves. A full discussion of this subject can be found in the *Craftsman*, March, 1904, and Mason's "Indian Basketry."

This exquisite basket, which is a masterpiece of Aleutian workmanship, was given to the Blue Anchor Society by the chief of the Attu in token of appreciation of certain assistance rendered the tribe during a period of distress, and it has been given to the American Museum for permanent preservation.

MARY LOIS KISSELL.

AN ANT-HUNTING TRIP TO EUROPE IN THE SUMMER
OF 1907.

HE past summer was devoted by Dr. W. M. Wheeler to a study of the European Formicidae (*ants*) and to securing extensive series of these insects for the Museum. This study was necessary for the purpose of throwing light on the structure, habits and relationships of our North American forms, many of which are regarded as mere subspecies or varieties of well-known palearctic (European and North Asiatic) species. After collecting for a short time at Ponta Delgada in the Azores, a locality in which no ants had been collected previously, at Gibraltar and at Genoa, Dr. Wheeler selected Switzerland as the best place in which to continue his work, because this country presents an extraordinary variety of physical and biological conditions and therefore an epitome, so to speak, of the whole ant fauna of Europe, and because it has become the classical locality for such studies through the remarkable work of Pierre Huber during the early years of the nineteenth century and of Auguste Forel during the past half century. Professor Forel, the most eminent of living myrmecologists, who until recently has been residing at Chigny near Lausanne on the shore of Lake Leman, showed the greatest interest in Dr. Wheeler's studies and gave him invaluable assistance, both by directing him to the most profitable localities in which to observe and collect ants and by accompanying him on excursions in the vicinity of Geneva and in Canton Vaud. Subsequently Dr. Wheeler made expeditions to Yvorne, Fully, Sion and Sierre in the upper valley of the Rhone (Canton Valais), to the Jura, to Locarno, Lugano, Bellinzona, Mendrisio, Monte Ceneri and Monte Generoso in Canton Ticino and to the Albula Pass, Samaden, Pontresina, St. Moritz and Silva Plana in the Upper Engadine (Canton

of Grisons). Owing to the great variety and difference in the altitude of the country covered in these expeditions, it was possible to secure large series of specimens of all but a very few of the Formicidæ known to occur in central and northern Europe and to gain an intimate acquaintance with these insects and their parasites and messmates. Particularly valuable was the series of observations on the habits and development of the singular ant-nest beetle *Lomechusa strumosa* observed in the pine-woods of the Upper Engadine. After spending two months in Switzerland, Dr. Wheeler continued his observations at Würzburg in Bavaria and in the vicinity of Dresden in Saxony. In the former locality he was generously assisted in the collection of material by Professors Spemann and Lehmann of the University and in the latter by Professor Escherich of the Royal Academy of Forestry at Tharandt and Mr. H. Viehmeyer of Dresden. The results of Dr. Wheeler's comparative studies of the North American and European ant faunas will be published in the Museum "Bulletin."

TUESDAY afternoon, October 29, the National Association of Audubon Societies held its annual meeting at the Museum. The meeting was largely attended, and, after routine business had been despatched, it was addressed by Mr. Frank M. Chapman, Associate Curator of Birds, who gave an illustrated account of the "Home Life of the White Egret." Mr. William Dutcher was re-elected president of the organization.

THE first Conference of Anglers was held at the Museum Monday evening, November 11, under the presidency of Dr. Henry Van Dyke of Princeton University, for the purpose of exchanging views, obtaining information and uniting more closely and effectively for the protection of the game fishes and for the improvement of the sport of angling.

WEDNESDAY evening, October 30, the Museum, in coöperation with the New York Academy of Sciences, had the pleasure of offering to its members and their friends an illustrated lecture by Professor William Bateson of St. John's College, Cambridge, England. The lecture was upon the subject "The Inheritance of Color in Animals and Plants" and was a popular exposition of the now famous Mendelian Law of Heredity.

THE "FLYING-DRAGON" GROUP.



HE remarkable little lizard shown in the group illustrated on this page, the so-called Flying Dragon (*Draco volans* Gray), takes its name from the numerous wing-like membranous expansions of its sides, which act like aéropplanes as the animal jumps or floats from branch to branch of the trees in which it dwells. These



THE FLYING-DRAGON GROUP
In East Mammal Hall, No. 207 of the main floor

folds of skin are supported by the five or six posterior pairs of ribs and may be folded like fans. On the throat of the male are three pointed orange-colored appendages, of which the middle is the longer. In the female these appendages are blue. The metallic sheen of the body and the prettily marked orange and black wings of the animal harmonize perfectly with the surrounding foliage and the gaudily colored flowers among which it rests, and aid in concealing it from its enemies as well

as from the insects for which it lies in wait. About twenty species of these Flying Dragons are widely distributed throughout the Indo-Malayan countries, though on account of their retiring habits they are nowhere considered common.

The six specimens in this group were collected in the Island of Nias, off Sumatra. The tree on which they perch is the Nutmeg (*Myristica fragrans*); the orchid is the beautiful *Phalaenopsis schilleriana* of Indo-Malaysia, and the climbing vine is *Cissus discolor*, a member of the Grape family. The Butterfly is the graceful *Leptocircus curius*; the beetles are *Coryphocera dohrni* and an unidentified Buprestid of this region.

The group was mounted by Mr. J. D. Figgins of the Museum staff.

MUSEUM NEWS NOTES.

AT a meeting of the Board of Trustees which was held at the Museum, November 11, resolutions of thanks were passed to the following friends of the institution:

To His Excellency C. A. M. LIEBRECHTS of Brussels, Belgium, for his assistance in connection with the Congo Exhibit, and he was elected a Patron.

To Professor A. FOREL of Yvorne, Switzerland, for his presentation of a collection of ants, and he was elected a Patron.

To Mrs. ROBERT WINTHROP for her contribution toward the development of the Habitat Groups of North American birds, and she was elected a Fellow.

To Mr. J. F. FREIRE MURTA for the gift of a collection of tourmalines, aquamarines and other gem material, and he was elected a Life Member.

To Mr. E. P. MATHEWSON for his gift of ethnological specimens from Chile, and he was elected a Life Member.

To Mr. FRANK K. STURGIS for his contributions to the field work of the Department of Vertebrate Palaeontology, and he was elected a Life Member.

To Mr. PERCY R. PYNE and Mr. J. P. MORGAN, Jr., for their contributions to the Alaskan Mammoth expedition.

To Mr. J. PIERPONT MORGAN for his gift of a boulder of New Zealand Jade.

At the same meeting His Honor, Mayor GEORGE B. McCLELLAN and Hon. HERMAN A. METZ were elected Patrons, and the election of Messrs. F. L. ST. JOHN, WILLIAM D. GUTHRIE and JOHN TREADWELL NICHOLS to Life Membership through the subscription of one hundred dollars each was announced.

DIRECTOR BUMPUS returned November 9 from a brief trip to Europe which was taken for the purpose of representing the American Museum at the dedication of the Senckenberg Museum at Frankfurt, Germany, October 13. While abroad, Dr. Bumpus took advantage of the opportunity to visit many of the principal museums on the Continent inspecting collections and museum methods in general.

Two pairs of antique carved elephant tusks and two carved ivory gods, all from the Benin district of the West Coast of Africa, have been acquired recently by the Museum. They were taken from King Prem-peh by a detachment of the British army which had been sent into the country to punish his tribe for cannibalism. All the objects were veritable idols to which human sacrifices were made and which had been held in high veneration by the natives for generations.

THE Museum has recently received forty-four interesting arrow heads found by H. W. Seton-Karr, Esq., during nine expeditions through the Desert of Fayoum, Egypt. Besides these, there are nine large arrow or spear heads, thirteen knives, three bent or wavy flakes worked on the edges and peculiar to the Fayoum Desert, one long worked flake and two adzes made of stone. The objects were found on the sites of ancient villages, but there is now no water near them, and the village-sites are indicated by mealing stones or grinders found bottom side up. There are also four celts or chisels from India.

DR. ROBERT H. LOWIE recently returned from a Museum expedition to Alberta and Montana. Dr. Lowie left New York on June 8 for Gleichen, Alberta, where he collected notes on the Northern Blackfoot. At Morley, Alberta, he camped for seven weeks with the "Stoney" Assiniboine, gathering a collection to represent their mythology. Then Crow Agency, Montana, was visited, where specimens and notes on the social and ceremonial organization of the Crow were obtained.

The bequest mentioned on page 116 should have been credited to the estate of Benjamin P. Davis, Esq.

LECTURE ANNOUNCEMENTS.**MEMBERS' COURSE.**

Thursday evenings at 8:15 o'clock. Open to Members and to those holding complimentary tickets given them by Members.

December 5.—HARLAN I. SMITH, "An Unknown Field in American Archaeology."

December 12.—FREDERIC A. LUCAS, "The Fur Seal—Its History and Habits."

PUPILS' COURSE.

Mondays, Wednesdays and Fridays, at 4 o'clock.

Open to School Children, when accompanied by their Teachers, and to children of members, on presentation of Membership Ticket.

Wednesday, December 4.—"Forests and their Dependent Industries." By A. C. BURRILL.

Friday, December 6.—"Historic Scenes in New England." By G. H. SHERWOOD.

Monday, December 9.—"Peoples of the Earth." By H. I. SMITH.

Wednesday, December 11.—"Scenes in our Western States." By R. C. ANDREWS.

Friday, December 13.—"Famous Rivers of the World." By R. W. MINER.

LEGAL HOLIDAY COURSE.

Fully illustrated. Open free to the public. No tickets required. Doors open at 2:45, lectures begin at 3:15 o'clock.

The programme for the season 1907-1908 is as follows:

Thanksgiving Day, November 28, 1907.

A Month's Tour of the Yellowstone Park . . . EDMUND OTIS HOVEY
Christmas Day, December 25, 1907.

Hiawatha's People HARLAN I. SMITH
New Year's Day, January 1, 1908.

An Ornithologist's Travels in the West . . . FRANK M. CHAPMAN
Washington's Birthday, February 22, 1908.

Mines, Quarries and "Steel Construction" . . . LOUIS P. GRATACAP

PEOPLE'S COURSE.

Given in coöperation with the City Department of Education.

Tuesday evenings at 8 o'clock. Doors open at 7:30.

December 3.—MISS CAROLINA H. HIDOBRO, "Typical Life in Chile."

December 10.—MRS. M. CLAIRE FINNEY, "The Land of the Incas."

Saturday evenings, at 8 o'clock. Doors open at 7:30.

December 7.—J. RUSSELL SMITH, PH. D., "The Story of a Ton of Coal."

December 14.—J. RUSSELL SMITH, PH. D., "The Story of a Piece of Board."

MEETINGS OF SOCIETIES.

Meetings of the New York Academy of Sciences and its Affiliated Societies will be held at the Museum during the current month as follows:

On Mondays at 8:15 P. M. The New York Academy of Sciences:

December 2.—Business meeting and Section of Geology and Mineralogy.

December 9.—Section of Biology.

On Monday, December 30.—The Linnaean Society.

On Tuesday evenings as announced:

The Linnaean Society, The New York Entomological Society and The Torrey Botanical Club.

On Friday evenings as announced:

The New York Microscopical Society.

Full programmes of the meetings of the several organizations are published in the weekly *Bulletin* of the Academy and sent to the members of the societies. On making request of the Director of the Museum, our Members will be provided with this *Bulletin* as issued. The meetings are public.

**Guide Leaflets Published by the
AMERICAN MUSEUM OF NATURAL HISTORY
For Sale at the Museum.**

(Issued as supplements to The American Museum Journal)

- No. 1.—THE BIRD ROCK GROUP. By FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. October, 1901. *Price, 10 cents.*
- No. 2.—THE SAGINAW VALLEY COLLECTION. By HARLAN I. SMITH, Assistant Curator of Archæology. December, 1901. *Price, 10 cents.*
- No. 3.—THE HALL OF FOSSIL VERTEBRATES. By W. D. MATTHEW, Ph.D., Assistant Curator of Vertebrate Palæontology. January, 1902. *Out of print.*
- No. 4.—THE COLLECTION OF MINERALS. By LOUIS P. GRATACAP, A. M., Curator of Mineralogy. February, 1902. *Revised edition, May, 1904. Price, 10 cents.*
- No. 5.—NORTH AMERICAN RUMINANTS. By J. A. ALLEN, Ph.D. Curator of Mammalogy and Ornithology. March, 1902. *Revised edition, February, 1904. Price, 10 cents.*
- No. 6.—THE ANCIENT BASKET MAKERS OF SOUTHEASTERN UTAH. By GEORGE H. PEPPER, Assistant in Anthropology. April, 1902. *Price, 10 cents.*
- No. 7.—THE BUTTERFLIES OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMULLER, Curator of Entomology. May, 1902. *Price, 15 cents.*
- No. 8.—THE SEQUOIA. A Historical Review of Biological Science. By GEORGE H. SHERWOOD, A. M., Assistant Curator. November, 1902. *Price, 10 cents.*
- No. 9.—THE EVOLUTION OF THE HORSE. By W. D. MATTHEW, Ph.D., Associate Curator of Vertebrate Palæontology. January, 1903. *Second edition, May, 1905. Price, 10 cents.*
- No. 10.—THE HAWK-MOTHS OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMULLER, Curator of Entomology. February, 1903. *Price, 10 cents.*
- No. 11.—THE MUSICAL INSTRUMENTS OF THE INCAS. By CHARLES W. MEAD, Assistant in Archæology. July, 1903. *Price, 10 cents.*
- No. 12.—THE COLLECTION OF FOSSIL VERTEBRATES. By W. D. MATTHEW, Ph.D., Associate Curator of Vertebrate Palæontology. October, 1903. *Price, 10 cents.*

- No. 13.—A GENERAL GUIDE TO THE AMERICAN MUSEUM OF NATURAL HISTORY. Jan. 1904. *Out of Print.*
- No. 14.—BIRD'S NESTS AND EGGS. By FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. April, 1904. *Reprinted*, February, 1905. *Price*, 10 cents.
- No. 15.—PRIMITIVE ART. July, 1904. *Price*, 15 cents.
- No. 16.—THE INSECT-GALLS OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMULLER, Curator of Entomology. October, 1904. *Price*, 15 cents.

(*Reprinted from The American Museum Journal.*)

- No. 17.—THE FOSSIL CARNIVORES, MARSUPIALS, AND SMALL MAMMALS IN THE AMERICAN MUSEUM OF NATURAL HISTORY. By W. D. MATTHEW, Ph. D., Associate Curator of Vertebrate Palaeontology. Jan. 1905. *Price*, 15 cents.
- No. 18.—THE MOUNTED SKELETON OF BRONTOSAURUS. By W. D. MATTHEW, Ph.D., Associate Curator of Vertebrate Palaeontology. April, 1905. *Out of print.*
- No. 19.—THE REPTILES OF THE VICINITY OF NEW YORK CITY. By RAYMOND L. DITMARS, Curator of Reptiles, New York Zoölogical Park. July, 1905. *Price*, 15 cents.
- No. 20.—THE BATRACHIANS OF THE VICINITY OF NEW YORK CITY. By RAYMOND L. DITMARS, Curator of Reptiles, New York Zoölogical Park. October, 1905. *Price*, 15 cents.
- No. 21.—THE DEVELOPMENT OF A MOLLUSK. By B. E. DAHLGREN, D.M.D. January, 1906. *Price*, 10 cents.
- No. 22.—THE BIRDS OF THE VICINITY OF NEW YORK CITY. By FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. April-July, 1906. *Price*, 15 cents.
- No. 23.—THE SPONGE ALCOVE. By ROY W. MINER, Assistant Curator of Invertebrate Zoölogy. Oct. 1906. *Price*, 10 cents.

(*Published as a separate series.*)

- No. 24.—PERUVIAN MUMMIES. By CHARLES W. MEAD, Department of Ethnology. March, 1907. *Price*, 10 cents.
- No. 25.—PIONEERS OF AMERICAN SCIENCE. Memorials of the naturalists whose busts are in the Foyer of the Museum. April, 1907. *Price*, 15 cents.
- No. 26.—THE FOYER COLLECTION OF METEORITES. By EDMUND OTIS HOVEY, Associate Curator of Geology. December, 1907. *Price*, 10 cents. *In press.*

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